

S. 2448.

THE
PHILADELPHIA
MEDICAL AND PHYSICAL
JOURNAL.

COLLECTED AND ARRANGED
BY BENJAMIN SMITH BARTON, M. D.,
PROFESSOR OF MATERIA MEDICA, NATURAL HISTORY, AND BOTANY,
IN THE UNIVERSITY OF PENNSYLVANIA.

VOL. II.



PUBLISHED BY

JOHN CONRAD & CO., PHILADELPHIA; M. & J. CONRAD & CO., BALTIMORE; SOMERVELL & CONRAD, PETERSBURG; AND BONSAL, CONRAD, & CO., NORFOLK.

PRINTED BY T. & G. PALMER, 116, HIGH-STREET.

1806.





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PART I. VOL. II.

1805.

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J. CONRAD & CO., CHESNUT-STREET, PHILADELPHIA; M. & J. CONRAD &
CO., BALTIMORE; RAPIN, CONRAD, & CO., WASHINGTON; SOMERVELL
& CONRAD, PETERSBURG; AND BONSAL, CONRAD, & CO., NORFOLK.
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1805.

TO
THE STUDENTS OF MEDICINE
IN THE
UNIVERSITY OF PENNSYLVANIA.

GENTLEMEN,

A PORTION of the *Philadelphia Medical and Physical Journal* is, with great respect, and even with peculiar propriety, inscribed to you. With respect, by reason of my personal esteem for, my sincere attachment to, many of you ; my good wishes for all of you : with propriety, as without the zeal which you always manifest for the advancement of medical and natural knowledge, works of this nature would rarely be undertaken, and could not be supported.

It is a fact, and it is one which greatly redounds to their honour, that the Medical Students of the United-States, A VERY CONSIDERABLE PROPORTION OF WHOM ANNUALLY VISIT THE UNIVERSITY OF PENNSYLVANIA, are, at this time, the principal SUPPORTERS, and by no means the least respectable CULTIVATORS, of all the branches of Medical and Philosophical Science, within the limits of the Union. It is, consequently, among the students of medicine that we are to look for some of the most successful efforts for the advancement of those useful and noble studies, which lay the foundation of our individual prosperity and happiness in life ; which so essentially administer to the happiness of those around us, while they even confer the highest species of dignity upon our country, and our times.

DEDICATION.

When I reflect upon the number of young men who are every year formed, as it were, into usefulness, in Philadelphia; who, in this PUNCTUM SALIENS of the science of our country, are conducted to at least the *first* step in the series of their future glory, I cannot but consider as truly happy, the situation in which Providence has placed the Professors of Medicine in the University of Pennsylvania. Peculiarly happy do I consider my own lot: since with equal attachments to the science of MEDICINE, to which I have been brought up, and in which I am to continue the remainder of my life, I have attachments (increasing attachments) to other sciences, those of NATURAL HISTORY and BOTANY. It has been my fortune to behold *almost* the EARLIEST DAWN of these sciences in Philadelphia: to see them, by the exertions of MY PUPILS, growing into consequence among us; and even firmly fixing their roots in this happy portion of the world, which is so well suited to their largest and most vigorous state. Even in the hours of my sickness or my pain, I look forward with complacency upon the future improved state of Medicine and Natural History in the United-States; and when told, by the frequent messenger of illness, that my continuance will not be long among you, I can feel rich in the prospects that are opening on my view.

Among the sons of this University, I behold the future honours of our country. Much of what SYDENHAM, what BOERHAAVE, what CULLEN, what BROWN, what DARWIN, have taught in Medicine, will assume, under your observation and experience, and in YOUR TIMES, an aspect very different from the present. You will cancel many of the pernicious errors of the noble profession to which you have attached yourselves; you will clothe it with new truths, and with new beauties; you will render it a source of new comforts and new blessings to the world; and when you leave it, as you will leave it, still feeble and imperfect, you will have the glowing satisfaction of reflecting, that, by your genius and exertions, it has become more worthy of the appellation of a SCIENCE, and has essentially diminished the number of the *now* existing miseries of our species.

DEDICATION.

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By your genius and exertions, all the branches of Natural History will be greatly improved. You will not only enlarge, or live to see enlarged, the catalogue of animals, of vegetables, and of minerals; but you will live to see the FALL, you will, I hope, assist in hastening the fall, of some of the present Systems, or Arrangements, of these series of bodies. By enlarging the stock of useful facts; by walking in the rose-spread paths of Truth, with NATURE as your guide, you will prepare the way for those more permanent systems, which Providence *has* given man the ability to found: systems not liable to be affected by a few slender facts; not liable to be dissolved by the discovery of a new species of animal, of vegetable, or of mineral.

Proceed, with assiduity and ardour, in the course of your studies. Hasten to perform the parts allotted to you, in this opening scene of usefulness and glory. Remember how greatly your Preceptors have laboured for you; and carry with you, wherever you may go, the determined resolution to BE USEFUL TO YOURSELVES, YOUR COUNTRY, AND THE WORLD.

Be assured of my best wishes for your prosperity and happiness; and that I am, Gentlemen, with great respect,

Your friend and fellow-student, &c.,

BENJAMIN SMITH BARTON.

*Philadelphia, December 2d,
1805.*

PREFACE:

ALTHOUGH the present number of the *Philadelphia Medical and Physical Journal* has been delayed a few weeks beyond the period at which it ought to have made its appearance, yet that delay has not originated, in any degree, from the deficiency of matter or materials. This is so far from being the case, that a number of original papers, and some of them important ones, that have been in my hands for several months, have been unavoidably deferred for future parts of this work. Some of these papers are here mentioned, under their respective heads.

MEDICINE.

1. On the disease of Cholera Morbus, &c., in the West-Indies.
2. On the origin of the Venereal disease, proving it to have existed in Europe several centuries *before* the discovery of America.
3. Additional Observations on the disease of Goitre, or Bronchocele.
4. On the Venom of several American species of Serpents, such as the Moccasin; &c.
5. On the poisonous effects of the *Hyoscyamus niger*, or Black Henbane.
6. On the medical properties of the *Collinsonia canadensis*, and other species of this genus.

PREFACE.

NATURAL HISTORY, INCLUDING BOTANY.

7. On the most essential differences between the Asiatic and African species of Elephants*.
8. Tabula Avium alibi hiemantum tempore vernali adventum commonstrans. Communicated by an ingenious correspondent in New-England.
9. A Memoir on the Partridge of Pennsylvania. By Mr. William Bartram.
10. A Catalogue of the Plants of the State of Delaware, and of the District of Columbia. See page 177 of this portion of the Journal.

AGRICULTURE.

11. Thoughts on American Horticulture.
12. On the disease of Rust, as it affects the Wheat, &c., in the United-States.

ANTIQUITIES.

13. On the population of America. By Mr. S. P., of Pennsylvania.
14. On the use of Copper among the American Indians.

BIOGRAPHY.

15. Two articles.

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The whole, or the greater number, of these papers will be published in the second part of the present, and in the first part of the next, volume.

A copious Index will accompany the second part of the present volume; and a similar index will be given at the completion of every succeeding volume, or, perhaps, every two volumes.

Arch-Street, No. 184. November 27th,

1805.

* Two of the figures on the plate (which accompanies this volume) are illustrative of this memoir.

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THE
PHILADELPHIA
MEDICAL AND PHYSICAL JOURNAL.

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SECTION FIRST.

VOL. II. PART I. A

THE
PHILADELPHIA
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I. *Observations and Experiments on the extraordinary degree of Cold, at Northampton (a midland county in England), during the Intense Frost of 1776-7. With Remarks on the Climate of London, Philadelphia, &c. In a letter to a friend. By A. FOTHERGILL, M. D., F. R. S., &c., and by him communicated to the EDITOR.*

“ Vides ut alta stet nive candidum
Soracte; nec jam sustineant onus
Silvæ laborantes; geluque
Flumina constiterint acuto !”

HORACE.

IN compliance with your request, my dear friend, I shall now lay before you some account of my observations and experiments, made during the uncommonly severe frost of 1776-7. As some of the phenomena appeared to me not a little surprizing, I minuted them down at the time they occurred.

The cold season commenced towards the close of December, 1776; and on January 27th, 1777, the immense quantity of snow which had fallen, within the last three weeks, had now rendered many of the roads impassable, and, in a great measure, cut off all intercourse between the metropolis and the northern parts of the kingdom; the snow, in consequence of a high wind, being drifted, in many places, to the height of more than twelve feet, presenting a prospect awfully sublime and picturesque, and exhibiting winter arrayed in all its horrors.

This morning the frost became suddenly more severe, the wind full east, accompanied with incessant snow. The barometer stood at $29\frac{3}{4}$; Fahrenheit's thermometer, which hung in my parlour, where there was a good fire, stood at 33° , barely one degree above the freezing point. On being removed into the open air, it presently sunk to 20° . At five o'clock, the same evening, it fell to 16° . At this time, eggs, exposed in the market, were found completely frozen, assuming the consistence of wax.

Experiment 1. This evening was placed on my garden wall, facing the north-east, an ounce of lemon-juice, of vinegar, and of red port-wine, in three china saucers.

January 28th. This morning, at eight o'clock, the barometer at 30° , the thermometer at 12° , wind north-east, the three liquors were each of them reduced to a solid cake of ice.

Experiment 2. This night, about eleven, were placed on the same wall the following liquors, viz.: spirit of mindererus (which has since been termed acetated ammonia), volatile spirits of sal ammoniac (both kinds, mild and caustic), dulcified spirit of nitre, red wine, and French brandy.

January 29th. Barometer 29°, thermometer 9°, the north-east wind excessively keen and piercing; the roads, which, by dint of great labour and expence, had just been cut through, to enable carriages to pass, were again completely drifted up. The several liquors above-mentioned, to my great surprise, now showed evident marks of freezing.

Experiment 3. They were suffered to remain all night, and two more cups were placed near them, with highly rectified spirit of wine (alcohol), and rectified vitriolic æther.

January 30th. The morning clear, but intensely cold; wind north-east; barometer $30\frac{1}{10}$; thermometer sunk to 3°, viz. 29 degrees below the freezing point! a degree of cold which, I apprehend, has been but rarely experienced in this climate, being considerably below that of the remarkable frost of the year 1739-40*. And yet the above was not the greatest degree of cold; for (having no opportunity to examine the

* The greatest degree of cold observed, during that uncommonly severe winter, was only $13\frac{1}{2}$, as appears from a record in the Philosophical Transactions of London.

thermometer, that morning, till half past eight o'clock) I was assured by other observers, that, about two hours before sun-rise, it was considerably below zero! This surely might have rivalled the “*frigus penetrabile adurens*” of the Roman poet, supposed capable of piercing through the bones to the very marrow. Unaware, however, were the ancients of that admirable provision in the human frame, which constantly preserves the internal parts of the same equal temperature, in the depth of winter as in the midst of summer; within the polar circle as under the equator.

On examining the liquors upon the garden wall, I found, to my astonishment, all of them (except the alcohol and vitriolic æther) perfectly congealed: the first time I had ever seen wine, brandy, and spiritous liquors in a solid form!

Experiment 4. Being desirous to try the effects of a high degree of artificial cold, added to the natural cold that now prevailed, an ounce of quicksilver, in an open phial, was placed in a frigorific mixture, consisting of snow, with vitriolic acid, &c. In the act of solution (during which the greatest degree of cold is generated) the thermometer was immersed in the frigorific mixture, which, in a few seconds, sunk the quicksilver far below zero, even into the bulb of the thermometer, when the quicksilver, both in the thermometer and in the phial, suddenly assumed the appearance of a thin plate of lead, placed on the surface of fluid quicksilver below, which doubtless was a real mark of incipient congelation. But unfortunately, at

that critical moment, the tube of the thermometer broke, which put an end to the experiment, and left the degree of cold undefined, which probably, however, must have been very little, if at all, short of 40° below zero. Had the entire congelation been completed, it would have proved the possibility of what, at that period, was judged to be utterly impracticable, especially in the mild climate of England, viz. the freezing of mercury, and converting that fluid semi-metal into a perfect and malleable metal.

This curious discovery, which had been lately effected by Professor Brown, at St. Petersburgh, and which had surprized all Europe, seems here to have been on the point of being realized in Great-Britain, though, from the supposed impossibility, I was led to discredit my own senses. But since the freezing point of mercury has been ascertained to be 39°, or not to exceed 40° below zero, the congelation has been repeatedly accomplished in England, under very inferior degrees of natural cold, aided by frigorific mixtures.

January 31st to February 1st. The barometer 29 $\frac{1}{2}$, the thermometer 16°; the atmosphere serene, and much more mild.

February 2d. Wind south; barometer at 29; a warm, misty morning, succeeded by a pleasant, spring-like day, which ushered in a very gentle and agreeable thaw, the thermometer, within the last 48 hours, having risen rapidly from below zero to 40°: such

was the wonderful change of temperature, in so short a space of time! And it seems worthy of observation, that the epidemic Catarrh, which had prevailed universally, during the mild season immediately preceding, suddenly disappeared on the approach of the late intense frost, but, on the commencement of this sudden thaw, began to re-appear, together with the rheumatic affections of the former period.

On similar occasions, I have repeatedly remarked, that, on the breaking up of a frost, people are peculiarly susceptible of cold: hence, at such times, the incessant coughing in churches and public assemblies, resembling the attack of a general influenza.

Query. Is a sudden transition from a cold to a warm, or from a warm to a cold atmosphere, the most injurious to the human frame?

May you, my dear friend, long continue “*totus teres atque rotundus:*” in other words, full proof against both, and all the other vicissitudes of our changeful climate.

A. F.

Additional Remarks on the Climate of London and Philadelphia.—Evaporation.—Scale of Heat enlarged.

Such an intense degree of cold, in England, as to sink the mercury below zero, perhaps, scarcely oc-

curs above once in a century, and therefore can afford no inference in estimating the temperature of the climate, which is generally allowed to be remarkably mild, especially along the coasts.

England being placed between 50° and 56° north latitude, and surrounded, in a great measure, by the sea, except the part bordering on Scotland, its insular situation renders it liable to frequent showers, and great vicissitudes of weather. On the other hand, the refreshing sea-breezes tend to moderate the extremes of summer's heat and winter's cold, to which other places, lying in the same parallels of latitude, are exposed. On this account, it is friendly to the health and longevity of the inhabitants, of which I have elsewhere collected some remarkable instances*.

The mean heat about London, on an average of nineteen years, is $50-6^{\circ}$; the annual quantity of rain 21 inches, which is sufficient to fertilize the earth, without producing redundant moisture. Hence that perennial verdure, which every where adorns the country, and is not confined to the vallies, but extends even to the summits of the hills, as has been observed, with surprise, by most foreigners.

England yields not only luxuriant crops of grain, but the richest productions of the orchard and the

* Memoirs of the Manchester Philosophical Society. Vol. I.
VOL. II. PART I. NO. 1. B

garden. Even London and its suburbs, though peopled with more than a million of inhabitants, are plentifully supplied with all kinds of roots, fruits, and esculent vegetables, from grounds within the distance of twelve miles.

But this could not be accomplished without a rich soil, and a high degree of cultivation. The variable state of the weather may be accounted for from the vicinity to the ocean, the lofty mountains in Wales, in Derbyshire, Yorkshire, &c., which attract the clouds, and, suddenly changing the state of the winds, produce copious showers in the mountainous districts. Hence the annual fall of rain varies, according to situation and the state of the winds, from 21 to 36 inches. A westerly or south-west wind prevails, indeed, almost three-fourths of the year, which disposes to frequent rain. But the quantity of rain which falls during the course of the year is a very uncertain test of the moisture or dryness of any particular season, situation, or climate. There may be little, or even no rain, and yet the air be constantly damp and foggy; or there may be heavy rains, with a comparatively dry state of the atmosphere. The same depth of rain will likewise produce different effects on the air, according as it falls upon a flat or hilly country: for large quantities soon quit the hills or high grounds, while smaller quantities have more lasting and powerful effects on a flat country. Much also depends upon the nature of the soil, whether clay or sand; whether firm and compact, or loose and spungy.

Is not evaporation, therefore, a more accurate test of the moisture or dryness of the atmosphere, than the quantity of rain?

Though the quantity of rain and of evaporation varies at different seasons, according to the winds and temperature which prevail, yet, on an average of four years, it has been found that the evaporation very nearly equals the rain.

The evaporation from the surface of water is also found about six times greater than from a surface of earth.

When the wind sweeps over warmer latitudes, it envelops a vast portion of moisture exhaling from the ocean, and retains it till it reaches the colder climate of England, where it remains suspended in clouds, or precipitated in rain, according to the state of the atmosphere. Hence the south or south-west winds are so often accompanied with rain. The surplus of the rain, not raised by evaporation, tends to refresh the ground, and to supply springs and rivers, and is thence perpetually returning to the ocean, the grand reservoir, from whence it came. “ All rivers (says the inspired preacher, in the true spirit of philosophy) run into the sea, yet the sea is not full; unto the place from whence the rivers came, thither they again return.”

It has long been generally allowed, that water may exist in air in three different states. 1st, In a state

of perfect solution ; 2d, In a state of beginning precipitation ; or 3d, Completely precipitated, and falling in drops of rain.

In the first instance, where the water is in a state of perfect solution, the air is clear, dry, heavy, and its powers of solution still active, though it already contains a considerable portion of water. In the second, the air becomes moist, foggy, its powers of solution are diminished, and it becomes lighter in proportion as its water is deposited. It is a singular and well-attested fact, that it never rains in the region of Peru ; but that, during part of the year, the atmosphere is constantly obscured with vapours, and the whole country involved in what they call *garuas*, or thick fogs*.

It is not necessary to point out the causes which thus dispose the air to deposit its dissolved water ; nor to consider with what bodies air hath a stronger affinity than with water ; neither to enquire how far the electrical fluid is engaged in the process. It is sufficient to observe, that so long as these causes have a general action on the air, they diminish its power of solution, and, when they operate for a considerable proportion of the year, they produce a foggy atmosphere, or a moist climate ; and that, when the air retains its humidity in a perfect state of solution, the climate is dry : consequently, that the moisture or dryness of a climate do not so much depend upon

* D'Ulloa's Voyage to South-America. Vol. II. p. 69.

the absolute quantity of water which is contained in the air, as upon the air being in a state of perfect or imperfect solution. During long-continued summer droughts, a very large proportion of water is dissolved in the air; notwithstanding this, the air is still dry, and continues to be so as long as the water remains in a state of perfect solution; but no sooner are the powers of solution diminished, than what was before a dry, now becomes a moist climate.

In the third instance, the dissolved water may be either slowly precipitated in the form of dew, or drizzling mist, or, more powerfully, in heavy rain; or there may be local and copious precipitations from particular regions, as in sudden thunder-showers, while other parts of the atmosphere retain their water in a state of perfect solution.

Agreeably to the above doctrine, which has been ably supported by Dr. Halley, M. Le Roi, Dr. Dobson, and other eminent writers, it would appear, that atmospheric air is the proper solvent of water, as water is of salt, and, consequently, that it ought to be considered as the immediate cause of evaporation. But this theory, though ingenious and beautiful (as it certainly is), will, nevertheless, I apprehend, on a more close enquiry, be found unsatisfactory*, because it has lately been discovered, by experiment, that water evaporates more speedily in *vacuo* than in the

* For, notwithstanding the affinity between air and water, yet it has never been proved, that the former alone can dissolve the latter.

open air. The air being exhausted, to what other invisible agent can the evaporation be attributed?

To no other than *caloric*, the subtle principle of heat, which, uniting with the water, converts it into an elastic vapour, lighter than air, which, therefore, instantly ascends, and mixes with the atmosphere. The principle of heat, then, seems to be the true cause of this curious phenomenon. As agitation is also known to promote evaporation, so a brisk wind may conspire with the heat of a climate in expediting the process.

Philadelphia, situated in north latitude $39^{\circ} 57'$, longitude west from London $75^{\circ} 8'$; its mean heat has been stated at $52-5$; yet its extremes of heat and cold considerably exceed those of London, or what might be expected from its degree of latitude and level surface. It seems also liable to still greater and more violent transitions of temperature, and probably from similar causes to those which have been just mentioned. From the heat of the climate and variable state of the winds, the quantity of rain, and consequently of evaporation, must be much greater, particularly from the surface of the Atlantic Ocean, and of the large lakes, marshes, and forests, according to the point from which the wind blows. But the greater the evaporation occasioned by the summer's heat, the greater must be the absorption of *caloric*, or, in other words, the generation of cold, against the succeeding winter.

The summer of 1804 was considered more cool and temperate than common. My thermometer, in July, placed in the open air, in a north-east aspect, about fifteen feet from the ground, vibrated between 80° and 90° , but never stood higher than 91° , though, in other parts of the city, it was said to reach 92° , and at the Federal City 95° .

In the coldest part of the winter of 1804-5, which was allowed to be uncommonly severe, the thermometer varied from 15° to 10° , and finally sunk to 3° , which was the lowest I saw it, though other observers allege it was more than once below zero; and, in the neighbourhood of Boston, at least 12° lower than at Philadelphia, which, it is presumed, must have been an hour or two before sun-rise. But what are these, when compared with the extremes of heat and cold experienced in many parts of the torrid and frozen zones? For instance, amidst the burning sands of Nubia, where the thermometer is said to stand at 112° in the shade; or on the inhospitable coast of Greenland or Spitsbergen, where, in the depth of winter, the natural cold alone is sufficient to freeze mercury.

A principal cause of the different result of experiments, made in the same city, is to be chiefly attributed to the bad construction of the instrument, and irregularity of the scale. If, instead of the various thermometers at present employed by different nations, they would agree to use one uniform scale, as that of Fahrenheit only, and made by none but able artists, their experiments might then be more accu-

rate, also more easily compared with others, and their researches greatly facilitated. Glass tubes being unfit to measure high degrees of temperature, Mr. Wedgwood's thermometer of baked clay proves a happy invention, which was much wanted. 130 degrees of Fahrenheit's being equal to one of Wedgwood's, according to this proportion, Mr. Wedgwood has carried Fahrenheit's scale to the top of his own. Hence a scale of heat can now be given, from the highest degree yielded by a wind-furnace, to the greatest degree of cold yet known, or produced by art.

Of the remarkable degrees of temperature between these extreme points, the following instances may not prove unacceptable to such as are curious in metallurgy or experimental chemistry :

	Fahrenheit's scale.	Wedgwood's scale.
Extremity of Wedgwood's scale	32,277	240
Greatest heat of his small air-furnace	21,877	160
Cast iron melts	-	17,977
Greatest heat of a common smith's forge	-	17,327
Welding-heat of iron, greatest	-	13,427
Fine gold melts	-	5,237
Fine silver melts	-	4,717
Swedish copper melts	-	4,587
Brass melts	-	3,807
Heat by which his enamel colours are burnt in	-	1,857
Red heat, fully visible in day-light	-	1,077
		0

	Fahrenheit's scale,	Wedgwood's scale,
Red heat, fully visible in the dark	947	1
Mercury boils, also lintseed, and other expressed oils	600	
Oil of turpentine boils	560	
Sulphuric acid boils	546	
Lead melts	540	
Bismuth melts	460	
Tin melts	408	
Sulphur melts	244	
Nitrous acid boils	242	
Cow's milk boils	213	
Water boils	212	
Brandy boils	190	
Alcohol boils	174	
Serum of blood and white of eggs harden	156	
Bees-wax melts	142	
Heat of the air near Senegal, sometimes	111	
Heat of incubation	108	
Heat of birds, from	103 to 110	
Heat of domestic quadrupeds,	100 to 103	
Heat of hedgehogs and marmots, in a torpid state	39½	
Heat of the human body	97 to 98	
Heat of a swarm of bees	97 to 98	
Heat of the ocean under the equator	80	
Sulphuric acid, of specific gravity of 1780, freezes at	45	
Oil of olives begins to congeal	43	
Water freezes and snow melts	32	
Milk freezes	30	

Fahrenheit's
scale.

Human blood freezes	25
Strong wines freeze	20
Below zero.	
A mixture of snow and salt freezes	0 to 4
Brandy, of equal parts of alcohol and water, freezes	7
Proof spirit, in Reaumur's thermometer, froze at Tornedo	34
Mercury freezes	39 to 40
Cold, produced by Mr. Macknab, at Hudson's-Bay, by a mixture of sul- phuric acid and snow	69*.

*Heat—its twofold state—curious effects.—Light and
Heat—their great importance.*

It still may be not improper to observe, that the thermometer does not give the absolute heat contained in bodies, nor any sign of its presence while in the quiescent state, nor till it be evolved in the sensible form; also that our sensations of heat and cold are only relative terms, and apt to deceive us,

* Encyclopædia. Philadelphia. Vol. XVIII. article Therm.
N. B. This experiment is said to have been made on 24th De-
cember, 1804, with a spirit thermometer.

till the thermometer corrects our judgment. Thus the climate of Philadelphia, to a Greenlander, feels hot; to a West-Indian, cold. The heat of our land air, in summer, would be intolerable to fishes and aquatic animals. Nor can the reindeer, which delights in the snows of Lapland, subsist in the temperate climate of Great-Britain.

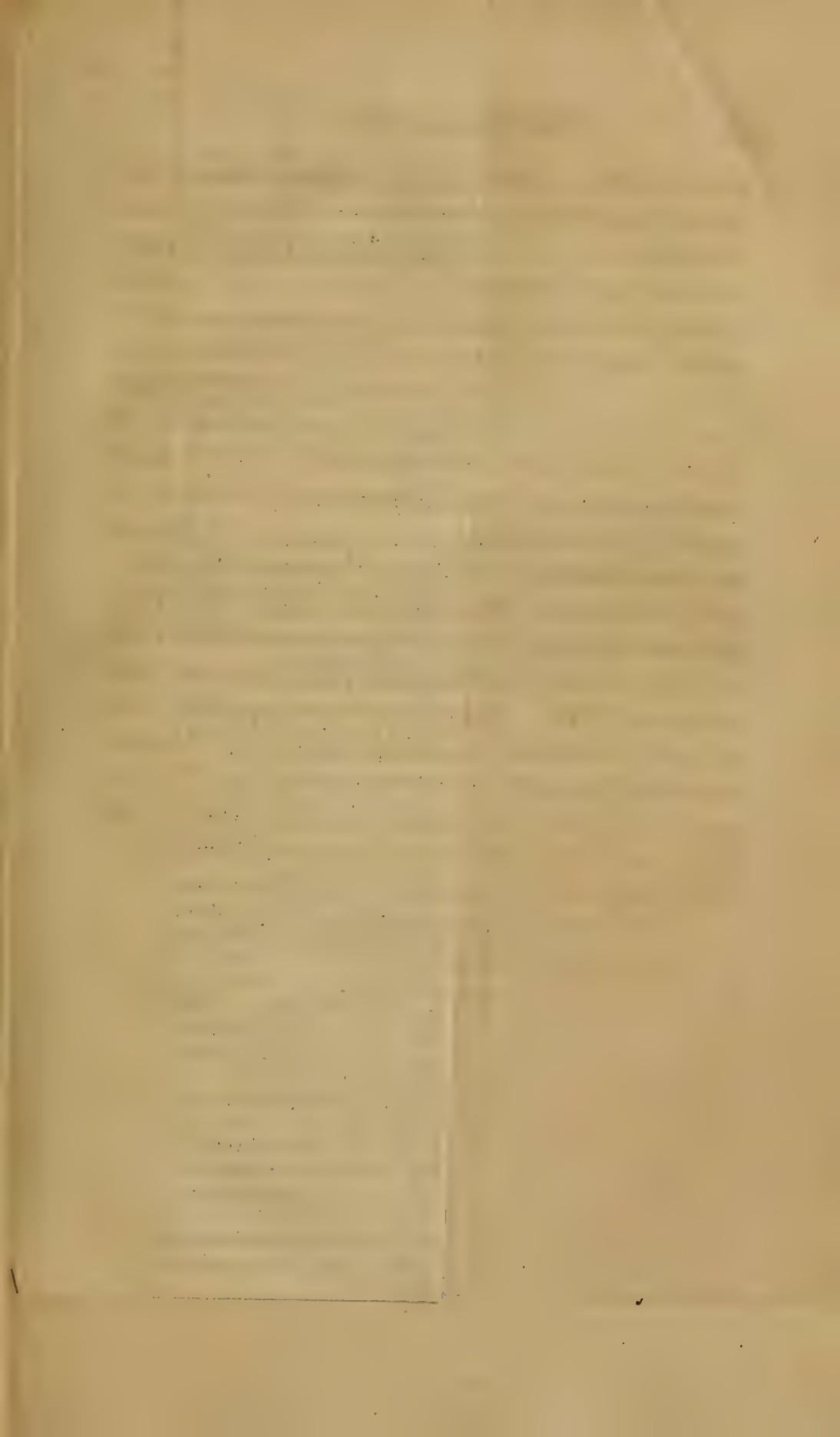
Combustion consists in the chemical union of air with the inflammable principles of bodies, and flame is only ignited vapour. As soon as the air is excluded, or its oxygen consumed, the combustion immediately ceases. It is not a little singular, that a red-hot iron inflames gunpowder, but is quenched in ardent spirit; on the other hand, that flame kindles ardent spirit, but not gunpowder. When any liquor is brought to its boiling point, it can receive no additional heat, in an open vessel, because it then begins to fly off in steam, which absorbs and carries with it a great quantity of heat, in a latent state: hence the steam is never hotter than the boiling liquor from which it exhales. Yet water may be rendered red-hot, in a close vessel, well secured, as has been performed in Papin's digester.

Cold is not a principle in bodies, like heat; it is only a negative quality, denoting the absence of a proportionate quantity of heat: yet the sudden reduction of temperature, from hot to cold, sensibly affects the human frame, and its effects on all other bodies are, of course, directly opposite to those of heat. Thus melting snow, by absorbing a large portion

of heat from the superincumbent atmosphere, generates a proportionate degree of cold. Hence the uncomfortable sense of chilliness, so generally complained of, during a sudden thaw. The principle of heat pervades all bodies, and is the immediate cause of fluidity, rarefaction, evaporation, and other important processes. Whether light be essentially different from heat, or only a different modification of the same principle, has not been determined. It is known, however, that when heat is put into a state of rapid motion, its emanations produce light. Whatever may be the essence of light and heat, their presence, as is well known, gladdens all nature, and is indispensably necessary to the whole animal and vegetable creation. The grand fountain from which they flow is the sun. Were that glorious luminary extinguished, the animal and vegetable tribes would become torpid, sicken, and die. Even the earth we inhabit, with the surrounding ocean, would partake in the fatal catastrophe, by being soon converted into a monument of ice !

Philadelphia, April 28th,

1805.



A TABLE,

Comprehending a period of thirteen years: showing in which of those years the Malignant Fever, commonly denominated Yellow-Fever, did, or did not, prevail, in the city of Charleston; giving the highest and lowest degrees of Heat, by Fahrenheit's scale, which occurred during the months of July, August, September, and October, during that time; and exhibiting also the quantity of Rain, in inches, which fell in those four months, during the last ten years.

YR. ^{.*}	MONTHS*		RAIN. Inches.	THERM. Degrees.	REMARKS.
1792	July, August, and October dry and very hot; September dry and cool.		87 to 37	-	First year of yellow-fever appearing. It began in August; continued in September and October, but was milder.
1793	July and August much rain; September and October dry.		89 to 48	-	No yellow-fever.
1794	July and August much rain; September and October dry and moderate.		91 to 49	-	Second year of yellow-fever. It appeared in July, continued in August and September, and subsided about the middle of October. The water in the harbour was so fresh, from rain, as to be drinkable.
1795	July, August, September, and October.		50	92 to 48	Third year of yellow-fever. It appeared, this year, in September and October; a few cases in November; none in July and August.
1796	Ditto. Ditto.		45	89 to 54	Fourth year of yellow-fever. It was very prevalent in July and August; less so in September and October. N. B. A great fire in Charleston on the 15th of June.
1797	Ditto. Ditto.		29	88 to 51	Fifth year of yellow-fever. It occurred in August and September; less fatal in October; none of it in July.
1798	Ditto. Ditto.		19	88 to 37	No yellow-fever.
1799	Ditto. Ditto.		43	91 to 55	Sixth year of yellow-fever. It began in June, and continued till early in November. Rain in June 11 inches.
1800	Ditto. Ditto.		14	89 to 48	Seventh year of yellow-fever. The disease existed in June, and the four following months.
1801	Ditto. Ditto.		22	90 to 54	Eighth year of yellow-fever. It occurred in all the four months, especially August and September.
1802	Ditto. Ditto.		23	89 to 54	Ninth year of yellow-fever. It prevailed in August, September, and October; two cases in November; none in July.
1803	Ditto. Ditto.		26	90 to 64	No yellow-fever.
1804	Ditto. Ditto.		23	91 to 53	Tenth year of yellow-fever. It prevailed in August and September; less so in October; two or three cases in November. The hurricane, on the 8th September, though violent, did not appear to arrest this fever, as was expected by some persons. See Hewatt's <i>History of Carolina</i> as to hurricanes.

* In this year, 1799, the interments were, from the 1st of August to the 1st of December, 362 persons, exclusive of people of colour. Of that number, 239 were strangers, or in the proportion of about two and a half strangers to one of the old inhabitants. Of the first number, 362, there died 218 adult males, 58 adult females, and 86 children of both sexes. The Yellow-Fever this year, in the months of August and September, proved more fatal, when compared with October and November, as 166 is to 64.

II. Facts and Observations, chiefly relative to the Yellow-Fever, as it has appeared, at different times, in Charleston, South-Carolina. In a letter from Dr. TUCKER HARRIS (of Charleston) to Dr. WILLIAM CURRIE (of Philadelphia). Communicated to the EDITOR by Dr. CURRIE.

DEAR SIR,

YOUR letter of the 30th September, 1804, came to hand. Your request that I should give you "an account of the rise, progress, and most successful treatment of the malignant fever," which has been, for several years past, so fatal to strangers in this city, is a task to which I find myself incompetent. I shall, therefore, content myself, and, I hope, in some measure, satisfy you, in relating some facts, respecting Yellow-Fever, as they occurred to my observation in practice.

It will be proper to premise, that, since the autumn of 1792 to the present time, this destructive disease has annually visited us, with the exception only of the years 1793, 1798, and 1803; but what reason to assign for our exemption from it those three years, I confess I know not: for it will appear from the table accompanying this letter, that, during the months of July, August, September, and October, in those years, the sensible qualities of the air, as regards heat, moisture, and dryness, varied very much. The same observation will apply to those nine years in which the yellow-fever prevailed: and I may men-

tion, that, in the year 1799, when that disease raged more than usually, the fall of rain, for those months, was 13 inches more than at any period for ten years; and if we add the quantity of rain in the month of June, 1799, it will appear, that, during five months in that year, no less than 54 inches of rain fell*. Therefore, if we except heat, in my opinion, the other sensible qualities of the atmosphere seem to have scarce any, or but a very partial, influence in exciting or repressing the disease. Heat is excepted, because, I may say, the disorder never exists, until after the summer has fairly set in, and continued for some time. I, therefore, apprehend, we must refer the origin of yellow-fever principally to the insensible qualities of the atmosphere, and those parts of it only which hover over our city; for, within half a mile of it, the deleterious effects thereof are dissipated and rendered innocuous, as appears from many strangers enjoying perfect health, who live a little distance from the town, provided they never breathe our vitiated air.

Varicous have been the causes assigned for the production of this deadly disease: such as the filth of cities, comprehending the public sewers or drains, gutters, privies, dirty cellars and yards, the docks, and other putrifying matters; to which have been added, the burial-places within cities, and the use of

* It will be found, that as much rain fell, in these five months, as in any one year from 1750 to 1759, a period of ten years. See Dr. Chalmers's *Account of the Weather and Diseases of South-Carolina*, page 42.

impure water. But I can no more subscribe to such opinions, than I can believe in the Alcoran of Mahomet, or that an acute angle is equal to a rectangle. I am influenced, in this sentiment, from many circumstances. If I can point out that all those supposed causes have existed for years, and yet no yellow-fever appeared; if I can also show that this disease has prevailed when few or none of those causes could be in existence, I think I have a good foundation to ground my opinion on.

Let us then trace the yellow-fever to its earliest origin *in this city*. Here we have no medical authority to refer to. We can only have recourse to Hewatt's *History of South-Carolina*. He tells us, that, in the year 1699, what he calls an *infectious distemper* broke out in Charleston, and carried off an incredible number of people; and he adds, the same year there was a dreadful hurricane, and most of the town was laid in ashes by a fire. Again, in 1703, he speaks of an *epidemical distemper* raging in the town, then threatened by the French and Spaniards, which I strongly apprehend to be the yellow-fever; for he informs us, that the *governor* held his head-quarters about half a mile from that place, not wishing to expose his men to the dangerous infection. Here we see a correspondence of facts with the present day; namely, that the people, at a small distance from the seat of the disease, were in perfect safety. He has styled it an *infectious* and *epidemic* distemper. But the oldest inhabitants never recollect to have heard of any disease prevalent here, of so deadly a nature

as the yellow-fever. I would, therefore, conclude, that the same disease existed at both times, more especially when he afterwards very explicitly informs us, that, in 1728, after an uncommonly hot and dry summer, a dreadful hurricane happened, in the end of August; and the same year, an infectious and pestilential distemper, called the *yellow-fever*, swept off multitudes of the inhabitants, both white and black. He again speaks of yellow-fever in the years 1739 and 1740. We have no medical record of the disease, until that given us by Dr. John Lining, who has written of it as appearing in 1732, 1739, 1745, and 1748. He tells us, it was an *imported* disease, and *contagious*. Of this opinion I shall say nothing at present.

We know no more about it, by any documents, until 1792. But I cannot refrain from remarking, that I perfectly recollect, in the autumn of 1761, this disease made its appearance in Charleston. It proved fatal to some strangers; and one person, I have been told, long a resident, then died of it. It occasioned so much alarm to the late Dr. Lionel Chalmers, of this place, with whom I studied at that time, that he sent his family out of town, during the sickly season, into the country. Other physicians did not then view it in so serious a manner. I apprehend, at that time, as at several different times since, during the autumnal months, the cases which occurred may have been sporadic; for since Dr. Lining's time, if we except a few solitary instances, we know little about it until the year 1792, a lapse of forty-four years.

I think I have now shown, that, at some particular periods, the yellow-fever has been nearly coeval with this town. Between the years 1699 and 1703, from Mr. Hewatt we find, that the white inhabitants of the whole colony amounted to between five and six thousand. The population of the town must, therefore, have been very moderate. The buildings, it is to be presumed, were much scattered; of course, less filth would be collected. It is more than probable, there were then no drains or sewers, and but a small number of docks and wharves. The water was, perhaps, less impure than at present: in short, few or none of the causes, which are now said to produce yellow-fever, did then exist, and yet, in my opinion, the disease did undoubtedly prevail, in both those periods.

I will now proceed to state other facts, to which I must refer for confirmation of the opinion I have adopted. During the years 1780, 1781, and 1782, when this place was garrisoned by British and Hessian troops, and when there were five or six thousand Europeans here, whole companies of soldiers occupied many of the houses, where the utmost cleanliness was not observed: filth of all kinds, with putrid animal and vegetable matters, abounded in different parts of the town: at that time, as well as now, there were docks, drains, privies, and a long *et cætera* of causes to produce yellow-fever, yet no symptoms of this disease appeared. Our continental soldiers, many of them northward men, who were crowded in prisonships, lying before this place, were brought into the continental hospital; yet, even among them, I never

observed, nor do I recollect ever to have heard them of, the yellow-fever.

We have now demonstrated, that, from the earliest settlement of this town, at which time the modern doctrine of certain causes of yellow-fever could scarcely exist, that disease did, on various occasions, appear: we have seen that, from 1780 to 1782, the three years in which this place was a British garrison, every cause, supposed to produce yellow-fever, existed, with even aggravated circumstances: it has also been ascertained, that, for the space of forty-four years, viz., from 1748 to 1792, no vestige of it was observed, excepting in the year 1761, and, perhaps, in 1770, and excepting some sporadic solitary cases in the autumn of some other years: we shall also find, from the table alluded to in the beginning of this letter, that, since the first appearance of the disease, in August, 1792, to the present time, it did not occur in the years 1793, 1798, and 1803, in which years it will be in vain to pretend that a more strict attention was paid, than on other occasions, to the quarantine orders, or that part of the police of the city which relates to cleanliness.

After all these facts are impartially and attentively considered, I am humbly of opinion, that the causes commonly supposed to produce yellow-fever are not well founded. I believe they have been rather hastily adopted, probably from too implicit confidence in the standing and character of those physicians who have promulgated and supported them, without sufficiently

attending to circumstances, necessarily and intimately connected with the subject. For my own part, I verily believe, that were our city to be kept as clean as the drawing-room of a fashionable lady, and were the waters we use as pure as those of Helicon, still there would be no security against the ravages of this direful hydra, this *opprobrium medicorum*, while that particular idiosyncrasy or diathesis of the atmosphere obtains, which gives life to the disease. In what this idiosyncrasy consists, I confess myself much at a loss to determine. Were I to hazard a conjecture, I might say that it probably depended on a peculiar unknown modification of the atmosphere, evidently the consequence of the heats of summer, connected with putrid miasmata arising from thence: for the disease has never been epidemic until after some length of hot weather; and, in confirmation of this, we find, that a certain degree of cold never fails to obliterate it, until the heat of the subsequent summer, under certain circumstances, again revives it into action.

I shall here take notice, that I have frequently observed different idiosyncrasies or constitutions of the atmosphere to produce different epidemics, which are often varying. I well remember, between the years 1777 and 1781, that, among people of colour *only*, an epidemic prevailed, which proved fatal to vast numbers of them. It was not confined to any season, for I have seen it in the autumn, and in the depth of winter. It was, by some, called the yellow-fever, by others the camp-fever, with what propriety I

know not. But it never affected white people, not even those in the prison-ships. During this period, white persons were severely afflicted with an epidemic fever, of short continuance, and attended with little danger. It was accompanied with distressing pains, all over the body and extremities, and from thence was denominated the break-bone-fever. I considered it as a rheumatic-fever, affecting principally the muscular parts. Our usual autumnal intermittents were, at this time, almost obliterated, as very few of them were met with in practice. After this, another change of atmospheric constitution took place, and, from 1783, we were severely handled, for four or five years, with scarlatina anginosa, sometimes attended with croup. When this last symptom was present, the patients universally died. This disease gave way, at last; and, from another constitutional change in the atmosphere, the influenza dashed in upon us, attacking, indiscriminately, persons of all colours. In process of time, this retired, and, unfortunately for us, in the year 1792, the *box of Pandora* was again opened upon us, and a complaint, far more deadly than any of the former (I mean the yellow-fever) has been exercising its fury, for several years, almost exclusively among *white* strangers to our city.

The foregoing facts are incontrovertible; and from thence it results, that we must look for the source of yellow-fever to some other causes, than what have been commonly assigned. What these causes are, I do not pretend to ascertain. I am, however, decidedly of opinion, that heat, combining with some un-

known modification of the atmosphere of our city, has, in ten out of the last thirteen years, given existence to this dreadful disease.

So far have I proceeded, supported by facts, as respects the *origin* of yellow-fever. Let any one else point out, more satisfactorily, the causes of this disease, than has hitherto been done, and lay down an effectual *methodus medendi*,

“Et erit mihi magnus Apollo.”

I will now proceed to relate some facts, as to the *nature* of yellow-fever, so far as respects the idea of its being *imported*, or *contagious*.

This part of the subject has been the means, I find, of an unfortunate division of sentiment among the physicians of your city; and which, I believe, still unhappily subsists. “Who shall decide, when doctors disagree?” Both parties cannot be right. If the disease can be imported, as is contended for on the one hand, the restrictions on commerce, however severe, ought to be strictly and rigidly enforced, to prevent the introduction of so dreadful a scourge to the health and happiness of our citizens. If, on the other hand, it cannot be imported, so as to prove contagious, which I verily believe, surely the shackles on commerce should be greatly loosened, or, indeed, taken off altogether. I am disposed to believe, that the yellow-fever has never been imported, so as to be contagious, into this city, for this cogent reason,

among others : our commercial intercourse, with the different ports in the West-Indies, hath been uniformly and annually continued, for several years past; in all that time, it has never been suspected to have been communicated, by the crews of any of the vessels arriving from thence, to persons in whose houses the sick have lodged, or to those in the hospital to which they have been sent. Moreover, under such circumstances, how has it happened, that, in the years 1793, 1798, and 1803, we had no yellow-fever here, although our communication with those places still continued to go on ? In the year 1793, it prevailed in Philadelphia, to a violent degree. That year we escaped it. In the years 1798 and 1803, we were also free from its ravages. Not so the inhabitants of Philadelphia and New-York. This cannot be ascribed to a stricter attention, on our part, to quarantine laws and regulations ; because, for several years past, whenever the Medical Society of this State has been applied to for their opinion, by the executive authority, in regard to the disease, they have advised, as much as possible, to dispense with a severe quarantine of vessels coming from ports where the disease had existed, after being visited by the port-physician, and allowed, by him, to come up; and, in this, they were influenced by a conviction, that it was neither contagious nor importable.

Moreover, if, during those three years, it was imported into Philadelphia and New-York, how did it happen that it was not, in like manner, brought to our city, although our trade with the West-Indies conti-

nued to go on? Or, why was it not imported, into those two cities, from abroad, while we had the disorder among us? It is, therefore, impossible to be accounted for, with any shadow of probability, upon the ground of the disease being importable.

I cannot help here remarking, that it appears to me a striking circumstance, that the College of Physicians of Philadelphia should contend, that yellow-fever can be imported; and yet, at the same time, recommend, in the strongest terms, all the means of prevention from domestic sources, as are advised by the Academy of Medicine, who are of a different opinion. For, if it be an imported disease, I should suppose there would be little reason to apprehend that any bad consequences could result from domestic origin. On the contrary, if yellow-fever should be certainly of domestic origin, as scarcely one physician in this city now doubts, all quarantine laws respecting it must be nugatory.

With respect to the *contagious nature* of yellow-fever, so far as it has occurred in this city, there is no instance, which can be cited, to induce the smallest suspicion thereof. It appears, that not only Europeans and strangers* from the different states, who visit our city, take the disease and die, without communicat-

* Among strangers, I comprehend children, under two or three years of age, whose systems have not been assimilated to the state of the atmosphere of our city. Several such have died, with symptoms of black vomit. Some few negroes (particularly from the country) have had the same symptoms.

ing it to the physicians, nurses, or attendants, but that people from the country, strangers to our atmosphere, on coming to town, often sicken on their way home, and die in houses on the road; yet, in no one instance, hath the disorder been transferred to any of the individuals of the family who received them in. This, in my opinion, is an undeniable and convincing proof of the *non-contagious* nature of yellow-fever. Indeed, I strongly doubt whether any disease, originating from vegetable or marsh miasma, can be contagious, for, as yet, it has never been demonstrated: while, on the other hand, I am inclined to believe, that *animal*, perhaps it would be more correct to say *human*, *effluvia*, under certain modifications, prove the source of all such diseases as are of a contagious kind; and the operation of this contagion is not, as happens in the case of yellow-fever, confined to the autumnal months, but will exist at any season. This may, perhaps, serve, in some measure, to discriminate between epidemic and contagious disorders; the last making no distinction between whites and people of colour, or strangers and old inhabitants, but affecting the systems of all, equally alike, as is the case in measles, small-pox, jail, and other contagious febrile diseases.

While I so freely express my doubts, or rather my convictions, respecting the filth of cities, &c., not being the causes of yellow-fever, you must not suppose that I am an advocate for neglecting the cleanliness of our streets, &c.: on the contrary, I am decidedly of opinion, that the removal of all such nui-

sances, as well as the introduction of pure water into cities, will contribute, at least, to the comfort, if not to the general health, of the inhabitants.

With respect to a successful *methodus medendi*, on this head I must be silent, for I know of none. Indeed, I believe the same may be said of many of the other practitioners here, who are candid in their communications. Every mode of practice recommended from your quarter and elsewhere has been tried; but the disease has baffled the energies of medicine, in every shape; and when a recovery takes place, I believe it to be as much owing to the *vires naturæ medicatrices* as to medical aid.

I could expatiate more fully on the subject, but the short limits of a letter prevent it, and I go on to the other question in your letter: "What effects the late hurricane had on the state of the yellow-fever here? If any persons supposed that the violence of the gale would have dissipated the cause of the disease?" But after recollecting what was mentioned by Hewatt, which has been noticed in the beginning of this letter, I was rather a sceptic in regard to that opinion, and subsequent events proved that I was not wrong. After allowing a certain period to elapse, during which persons subjected to the disease might have been supposed to contract the *seminia* thereof, it appeared there were still new cases of it occurring, and which continued so to do, during the first part of the month of October, after which it gradually declined. If I recollect right, one or two cases ended fatally on

the first days of November; whence I conclude, that, as on former occasions, even a hurricane is no extinguisher of the seeds of yellow-fever.

I have thus given you as correct an answer to your enquiries as lay in my power. I have stated real facts as they occurred, and, I think, conclusive inferences may be drawn from them, as relates to quarantine regulations here, so far as regards the West-India islands, and other places where yellow-fever prevails. As occurring in this city, the disease appears to me to be an epidemic, not importable, and really non-contagious, but arising from domestic sources. What they are, I cannot say. I must now conclude this very long letter, and, if it be thought proper, you are at liberty to make what use of it you please.

Yours, &c.

TUCKER HARRIS.

Charleston, December 18th,

1804.

III. Observations on the preceding Paper. In a letter from Dr. CURRIE to Dr. HARRIS. Communicated to the EDITOR by Dr. CURRIE.

YOU have clearly shown, from historical records, that the yellow-fever made its appearance in Charleston (and, you might have added, in Philadelphia), and occasioned great mortality, at an early period after its first settlement, when the population was small, the buildings few and scattered, and the docks

and wharves were in their infancy; and, of course, when that combination of causes, which have been assigned by the advocates of the domestic origin of the yellow-fever, had no existence, or existed in a very partial and limited degree.

You have also shown, by an enumeration of facts, which are fresh in the memory of multitudes, that in those cities, where all the causes, to which it has been imputed by the believers in the domestic origin of the disease, existed, in much greater abundance, for many years previous to 1793, than since that period, no yellow-fever made its appearance; and, consequently, have proved the insufficiency of those causes to produce it.

So far, my sentiments correspond, exactly, with yours; but I cannot agree with you, when you reject all other causes, and have recourse to a supposed change in the constitution of the atmosphere, to account for the origin of a disease so violent in its symptoms, so rapid in its progress, and so generally fatal in its termination, and with which all the physicians in this country, who had entered into practice since 1762, were entirely unacquainted, at the time of its occurrence in Philadelphia, in the year 1793.

As the establishment of truth, on this subject, is of the greatest importance, not only to this country, but to all others with which it has commercial intercourse, I request your patient attention, while I endeavour to

point out some of the objections to which your opinion is liable.

If a change, such as you suppose had taken place in the constitution of the atmosphere, capable of producing a new and destructive disease, distinguished from the endemic fevers of this country, by the suddenness of its attack, the rapidity of its progress, and the fatality of its termination, it would, agreeable to the common course of things, have appeared at the same time, in every place on the globe, under similar circumstances. All our sea-ports, in particular, would have experienced its baleful influence the same years, and not, as has been the case, some one year, and some another.

In 1793, Philadelphia experienced its destructive ravages, while all the other sea-ports, without exception, escaped.

In 1794, it invaded and destroyed a great number of valuable citizens in New-Haven and Baltimore, while all the intermediate sea-ports (with the exception of a few cases, late in the season, in Philadelphia) entirely escaped.

In 1795, New-York, Norfolk, and Charleston, were the principal sufferers. In 1796, Newburyport, Boston, Chatham, on Connecticut river, and Charleston, sunk beneath its desolating influence. In 1797, Philadelphia, after an exemption for two years, became again subjected to its power. Bristol and Providence,

to the east, and Baltimore, Norfolk, and Charleston, to the south, also suffered by it, in 1797. In the year 1798, Baltimore and Charleston both escaped, though it invaded, and occasioned extraordinary mortality, in almost every other sea-port in the Union. Every year since 1798, one or more cities of the Union have suffered by this destructive disease, while the rest have remained free.

If the disease depended upon a change that had taken place in the constitution of the atmosphere, how is this irregular and capricious appearance to be accounted for?

If the disease depended upon the joint operation of some extraordinary change in the constitution of the atmosphere, and the exhalations from putrid vegetable and animal substances, the disease would appear in all the marshy districts of the country, and in different parts of the same city, or populous town, at the same time, and not have been confined, as has always been the case, to a single spot in the neighbourhood of the shipping, where it has been confined for the first fortnight, and afterwards spread to those families who had the greatest intercourse with the sick, after the manner of other contagious diseases, as I have repeatedly had opportunities of observing.

During the prevalence of the fever in Philadelphia, in 1793, more than 200 persons were confined in the criminals' apartment of the new jail, including 106 French soldiers, ordered there by the consul, and a

considerable number of debtors in an adjoining building. The usual number of patients remained in the hospital, and more than 200 pensioners in the alms-house. More than 2000 emigrants, lately arrived from the island of St.-Domingo, resided, at the same time, in different parts of the city.

Notwithstanding these circumstances, all the prisoners in the jail, the patients in the hospital, the pensioners in the alms-house, and the emigrants from St.-Domingo, residing in different parts of the city, escaped the disease, though they were surrounded, for more than two months, by the sick, the dying, and the dead, and breathed the same air as the rest of the inhabitants, with the exception of that in immediate contact with the sick.

If the disease had depended either on putrid exhalations, or a morbid constitution of the atmosphere, nothing, short of a miracle, could have preserved them from the disease.

If, in addition to these facts, we advert to the circumstance of the disease having been prevalent in Grenada, and several other West-India islands, some months before it made its appearance in Philadelphia, in the year 1793, of which we have the most positive testimony, I flatter myself you will be convinced, that this disease neither originates from domestic causes, nor from any change in the constitution of the atmosphere, but is to be looked for in a foreign source.

To remove all doubts on a question of such serious import to the safety and interest of the people of this country, the College of Physicians, of this city, have collected, and propose speedily to publish, convincing proofs of the foreign origin of the disease.

I hope you will pardon the liberty I have taken with your opinions, and, as I have your permission to make such use of your letter as I may think proper, I propose to offer it, and my reply, to Dr. Barton, for publication, in his *Medical and Physical Journal*, a work, published every six months, and which must necessarily enlarge the circle of useful knowledge in this country.

P. S. They who deny the yellow-fever to be contagious, because it does not spread in the country, where there is a constant circulation of fresh air, might, with equal reason, deny the jail, or hospital-fever, the typhus of systematic writers, to be contagious, because it is communicated by the sick, only in confined and unventilated, or unclean situations.

The late Dr. James Lind, of Haslar hospital, the celebrated author of *Observations on the Diseases of Seamen, the Diseases of Europeans in Hot Climates, and on Infection*, asserts, that the jail or hospital-fever, though frequently malignant, and highly contagious, on board of ships crowded with men, especially when, on account of the wet weather, the hatches are kept shut, was seldom communicated to the nurses

or attendants, in the clean and airy wards of Haslar hospital, by those brought from on ship-board into that place.

A similar fact is related by Sir John Pringle, in consequence of the infection of the jail-fever from certain prisoners, brought into court at the Old-Bailey, in the year 1750. Four of the bench, several of the jury, and a considerable number of other persons, died, in consequence of having received the infection, without communicating it to others.

The late Dr. Thomas Bond, of Philadelphia, in an introductory lecture, delivered at the Pennsylvania hospital, on the 3d day of December, 1766, and recorded on the minutes of that hospital, relates the following facts, in proof of the power of fresh air and cleanliness, in destroying the contagion of the ship-fever.

"I lately (says the doctor) visited an Irish passenger-vessel, which brought the people perfectly healthy, until they came into our river. I found five of them ill, and others unwell, and saw that the fumes of infection were spreading among them. I, therefore, ordered the ship to be quarantined, and to be well purified with the steams of sulphur, and with vinegar; directed the bedding and clothing of the people to be well washed and aired, before any person should be permitted to land out of her; after which I advised separating the sick from the healthy.

"Twelve were put into different rooms, in one house, and fourteen into another, out of the city. The conveniences of the two houses were much the same.

"In one of them, little care was taken of the sick, who were laid upon the same foul beds that they, contrary to orders, had brought on shore with them. The consequence was, all the family caught the disease, and the landlord died.

"In the other, my instructions were strictly observed: the sick had clean clothes, and clean bedding, were well attended, and soon recovered, without the least injury to any person that visited them."

Doctor Hunter, who had charge of the military hospitals, at Jamaica, from the year 1781 to 1783, declares that the jail, hospital, or camp-fever, which he acknowledges is highly contagious, in the cold seasons of temperate climates, particularly in jails, work-houses, and the confined habitations of the poor, was never contagious at Jamaica, owing to the constant circulation of fresh air.

Dr. Carmichael Smyth observes, that fevers, of the most contagious nature, are seldom communicated, in clean and airy hospitals, to any but the nurses, or those that assist in taking them out and into bed, not even to those in the beds nearest them.

Dr. Haygarth, of Bath, who has been many years engaged in investigating the circumstances or causes

which favour or retard the propagation of contagious fevers, thinks his observations authorise him to say, that in small unventilated apartments, where the excretions and exhalations from the sick are permitted to remain and accumulate, seldom more than one person in twenty-three, exposed to the contagion, escapes disease; whereas, in large apartments, where fresh air is constantly admitted, and scrupulous attention is paid to cleanliness, few or none, even of the most intimate attendants, will be affected by it.

Doctor Lind, of Windsor, formerly in the service of the East-India Company, in a letter addressed to Thomas Pennant, Esq., published in the 9th volume of the *Medical and Physical Journal*, observes, that neither plague nor jail-fever, any more than small-pox and measles, can be produced by any other means than by infection received from some person or thing that is tainted with their specific contagion.

“ In the most aggravated state (says this writer) that I ever saw the jail-fever, in which two persons had life suspended, in the first attack of the disease, and several had buboes, and carbuncles, and other symptoms of the true plague, yet, by exposing those thus affected to the open air, their fevers were removed in a few days, and very few died.”

“ Of many hundreds that are landed, at times, from the fleets from Europe, at Madras, ill of the jail-fever, seldom any remains of it are to be seen,

after a week or two, at most, from the sick being all laid in the air, in open sheds."

Dr. James M'Gregor, in his *Medical Sketches of the Expedition to Egypt from India*, published in 1804, says, the typhus, or malignant fever of continued type, which, in Europe, has committed such havoc in fleets and armies, loses its power in the climate of India. "We know instances (says this gentleman) where, in transports, the typhus had broke out, and, on the passage to the Cape of Good Hope or India, had proved little less destructive than the plague could have done, but the disease never reached India. If a case was landed there, it never propagated the contagion; a second case never occurred on shore. On enquiry, I found that no case had ever been known on the western side of the peninsula, nor have I ever heard of its existence on the eastern side."

From these, and numerous other examples, recorded by medical writers, it appears, that other species of malignant fevers, as well as the yellow-fever, are contagious only in situations where the air is confined, and the exhalations of the sick are permitted to accumulate, through neglect of frequently changing the bed and body linen of the patient.

It has been contended, that the yellow-fever is not a contagious disease, because it does not exist, in this climate, at all seasons, and under all circumstances. According to this argument, neither the plague, dysentery, scarlatina anginosa, nor the measles

are contagious : for we learn from history, that the plague, when imported into the temperate climates of Europe, ceases at, or immediately after, the winter solstice ; and we learn from Dr. Fothergill's sixth edition of his *Observations on the Malignant Sore-Throat with Scarlet Eruption*, that it becomes epidemic, in the climate of England, only in the autumnal months ; and Dr. Willan, a physician of the first abilities now in London, in his *Observations on the Diseases of that City*, asserts, that the progress, not only of the scarlatina anginosa, but of the small-pox, is checked by the first frost in December.

Even the measles, according to the declaration of the celebrated Sydenham, requires a particular condition or temperature of the air to render its contagious principle active, in the climate of England, for he had never seen it epidemic, or generally diffused, excepting in the vernal months, and it always ceased in the month of July*.

It certainly ought not to be thought so very extraordinary, that the yellow-fever should originate only in tropical climates, when we consider, that several other diseases, like certain animals, are the products of some climates, and not of others. The spotted pestilence, with glandular swellings, originates in Egypt (and, perhaps, in Smyrna), and nowhere else ; the leprosy originates, with very few exceptions, only

* See the Medical Works of Thomas Sydenham, M. D., translated by Swan.

in Syria and Palestine ; the small-pox in Arabia ; the yaws in Guinea ; the syphilis in some of the provinces of South-America ; the plica in Poland ; the goitre in Switzerland ; the barbiers, or spurious palsy, on the coast of Malabar ; the scurvy is most frequent in the colder regions north or south of the equator ; and the typhus is the product of the more temperate climates.

*Philadelphia, May,
1805.*

*IV. Notice of the Yellow-Fever, as it lately prevailed
in Philadelphia. In a letter from Dr. CURRIE to
the EDITOR.*

I HAVE made particular enquiries respecting the practice of the physicians at the City-Hospital, this season, and find, that, after employing mercury in a few of the first cases of malignant fever admitted there, without success, they entirely abandoned its use, except in some particular instances, and then they combined it with some purgative.

They seldom employed blood-letting, as they found] purgatives equally certain in reducing the heat of the skin, and other febrile symptoms, at the time they received their patients (which was seldom before the close of the first stage of the disease), without being succeeded by such sudden debility and distressing disorder of the stomach, as appeared to be the case

when blood-letting was employed. In the employment or omission of the lancet, however, they were regulated by the existing state of the symptoms.

In general, they had recourse to the warm-bath, immediately after the free operation of a purgative; and, as soon as the patient was put to bed, they endeavoured to produce copious perspiration, by large doses of acetated potash, which they preferred to acetated ammonia, and the liberal use of warm diluting drinks, particularly by infusions of Eupatorium.

When these means succeeded in producing copious perspiration, with an alleviation of the pain in the head and back, the disease generally came to a speedy and favourable crisis: but when those symptoms were aggravated by the bath (and, in some particular cases, they appeared to have been aggravated by it), they spunged the whole trunk and limbs of the patient with cold water and vinegar, with the most refreshing and happy effect.

In the second stage of the disease, when a disordered stomach was the predominant symptom, after due attention to the state of the bowels, they employed the bath of a much higher temperature than in the preceding stage; and, immediately after the patient was put to bed, they applied blisters and sinapisms to different parts, and especially to those most affected, and directed additional covering, and such mild, palatable drinks, as, upon trial, were observed to remain best on the stomach. When the patient

complained of a burning sensation in that organ, they administered calcined magnesia, in large and repeated doses ; and, when the bowels were not free, they had recourse to laxative injections. But the hot-bath, followed by sinapisms and blisters, extensively applied, appeared to afford the most certain relief, when no medicine could be retained.

To relieve this disordered state of the stomach, when other remedies failed, they had recourse to injections of the most stimulating kind; and, among others, to the Spt. Terebinth., which they administered in doses of from half an ounce to two ounces, diluted with warm water, and repeated it at short intervals, till it occasioned considerable tenesmus, after which, the stomach generally became settled, and retained any medicine or nourishment that was thought proper.

The practice of the gentlemen, who had charge of the hospital, was certainly conducted with discriminating judgment ; for, although a considerable portion of the patients were admitted in the last stage of the disease, and, consequently, in a hopeless condition, more than one half recovered, including all that were admitted*.

I had an opportunity of seeing the stomachs of several persons examined, but could discover no marks of

* The cases admitted, from the 27th of August to the 25th of October, were 346 ; of these, 163 died.

gangrene in any of them, though some of the patients had had symptoms which strongly indicated its existence, for some time before their decease.

The black matter, usually found in the stomachs of those who died after the fourth day, had none of the characters of either blood or bile; for white paper, dipped in it, was neither stained red, purple, yellow, nor green, but appeared like it does when dipped in the fluid of a gangrene. Yet, from the extravasated blood, which always appeared on different parts of the surface of the stomach of those who had the black vomit, and the florid and extensive inflammation, observed in the stomachs of some who died at an early period of the disease, and had not vomited any black matter, though the vomiting of every thing taken into the stomach had been almost incessant, I am inclined to think the black-coloured matter, which gives the appearance of coffee-grounds to the contents of the stomach (and which is generally known to be the signal of a fatal termination) are only small portions of mucus, coloured by the dissolved and black blood which oozes from the dilated capillaries into it. It cannot be bile, changed in its colour, in consequence of a morbid state of the secretory vessels of the liver, because those vessels were seldom found diseased, and because the bile in the gall-bladder, which was generally full, retained its natural colour, or was changed to the colour and consistence of syrup of rhubarb. Nor is it probable, that the matter, which resembles coffee-grounds, is bile, changed in its colour and consistence after its entrance into the stomach, be-

cause large quantities of that coffee-ground appearance had been found in the stomachs of some who had little or no black vomiting; and, without some vomiting, or, at least, some efforts to vomit, bile cannot, readily, gain admission into the stomach. Nor can the dark-coloured flakey particles, which give the appearance of coffee-grounds to the contents of the stomach, be the villous coat, detached or abraded, because neither ulceration nor gangrene were observable in the stomach; and, without ulceration, or gangrene, it cannot be abraded.

I omitted mentioning, that when the disease put on the semblance of the typhus, without the stomach being particularly affected, wine was employed with considerable freedom, and, in many cases, with the most sensible benefit.

Philadelphia, November 2d,
1805.

V. *Observations on a Case of Petechiae and Hemorrhage, without Fever. Communicated in a Letter to the EDITOR, from WILLIAM DOWNEY, M. D., Physician at Mercersburg, in Pennsylvania.*

SEPTEMBER 8th, 1803. I was sent for to visit Mr. J. B., a man about thirty-eight years of age. He informed me, that, for three days past, he had a violent Diarrhoea, which had weakened him very much, and that the whole of his family was in a simi-

ilar situation, except that not one of the number was so much exhausted as himself. He did not complain of much pain or griping ; but the discharges were very large, and apparently of a watery nature.

The circumstance of all the family being affected at the same time, created a suspicion, that some noxious food had been used by them : but, on inquiry, this did not appear to be the case ; nor could any probable cause be assigned, for the disease, except the vicissitudes of the weather. For this had been very dry and warm, for some weeks in August, and after this there was a fall of rain, and cool weather.

Two doses of calomel and rhubarb, with laudanum, soon checked the discharges in Mr. B. The latter medicines alone had the same effect in two of the children. As I considered the father perfectly recovered, my visits were discontinued, and I heard nothing from him until the 8th of October, when he again sent for me. On entering his house, the extraordinary appearance upon his skin greatly alarmed me. His face, body, and extremities, were covered with petechiae, some of which were of the size of a dollar, and of a black hue. Others were not unlike flea-bites, and were painful, more especially those on his legs. He compared his feelings to those of a man after having received a severe beating.

His gums were much swollen, and as black as charcoal : his breath extremely fetid. He passed, by stool, considerable quantities of blood, which was of

the consistence and colour of tar. His urine, which was discharged in small quantity, was of a blood-colour, and very thick. His eyes exhibited the appearance of a person in the last stage of typhus-fever. The pulse was small, frequent, and by no means tense. An almost incessant cough and spitting of blood attended, and there were frequent hemorrhages from the nose.

The account which he gave me was, that, after the diarrhoea had ceased, he had, for several days, a great inclination to vomit; that this symptom finally left him; but that his appetite and former strength had never returned. Four days before my seeing him, he had symptoms of cholic, which terminated in a recurrence of his diarrhoea; and in two days after, the petechiæ began to make their appearance. At first, he suspected, that they were caused by the bites of bed-bugs, but the night preceding the day on which I visited him, a confluence of the spots had taken place, attended with a change of their colour.

Having never seen a similar case, nor met with any record of an affection exactly according with this, I was, at first, a little embarrassed. As the pulse indicated great debility and relaxation, and as he had lost large quantities of blood, I, at length, determined to prescribe the Peruvian-bark, the carbonate of potash, sulphuric acid diluted, and the copious use of wine. A weak solution of the same carbonate, together with the muriate of soda, was also used as a wash for his mouth.

October 9th. He was somewhat better. He had not discharged so much blood, either by stool or by coughing, and the pain in his back was moderated. His pulse much the same.

11th. Much better. The gums are not so much swelled, and have a clean appearance. Cough and discharge of blood moderated. He has a desire to eat mush and milk, which were allowed him. Rice and barley broths, with fresh meats, were ordered for his diet, and he was desired to continue his medicine.

14th. The petechiæ have almost disappeared. The gums still have a spongy appearance, but approach to their natural colour. It appears as if a portion of the gums has sloughed off, and left the teeth quite loose, and completely enveloped in tartar.

19th. He recruits strength fast. Appetite good ; but he is unable, from the looseness of his teeth, to masticate solid food. Every evening, his ankles and feet are swelled : for which I ordered frictions with a rough towel. Bark and wine continued.

28th. The swelling in his feet still continues, but, in other respects, he is perfectly recovered.

The phenomena which presented themselves in this case, I thought rather uncommon. Petechiæ and hemorrhage, for the most part, occur as a consequence of violent morbid action in the sanguiferous system : but here, from the commencement, no vio-

lent arterial action existed. The atony of the capillary vessels was, probably, effected by the discharges from the bowels.

*Mercersburgh, May 24th,
1805.*

VI. Some Account of the Great Hurricane of 1804.

In a letter from Dr. TUCKER HARRIS to Dr. W. CURRIE. Communicated to the EDITOR by Dr. CURRIE.

I SHALL now mention some of the effects of the late gale of wind on the vegetable creation. During the storm, it was said that the rain which fell had a saline taste; and, in fact, there is reason to believe, that the spray of the sea-water, by the violence of the wind, was carried entirely across the narrow isthmus of land, on the lower part of which Charleston stands. This neck extends about six miles; and, so far, the hardy ever-green pine-trees, to their very tops, felt the effects; for their leaves, to the eastward, turned brown, as if burnt or scalded by the brine. The deciduous trees, especially the fruit kind, such as peaches, pears, apples, plumbs, cherries, and mulberries, though in full foliage, wherever exposed to the “peltings of the pitiless storm,” were deprived of their leaves; but a fresh vegetation, and blossoms, soon followed. The Savannah locust, as it is called here, was anew clothed in green, and blossomed: a circumstance never observed before, at this season, in regard to that tree.

I have often seen some of the fruit-trees, above-mentioned, put forth a few blossoms late in autumn, but do not recollect to have seen fruit from them; whereas, in six or seven weeks after the storm, I gathered from mulberry-trees at my farm, three miles from town, ripe fruit, and the berries continued to ripen till the beginning of December, at which time I saw the common wild black cherry-trees, with fruit turning black on them. Four or five pears were set on one of my trees, and grew to the size of pigeons' eggs; and I have gathered some beautifully coloured apples, some as large, and larger, than two-ounce grape-shot, but without much flavour. I have learnt, from some very old persons, that, after the great hurricane of 1752, apples, in the like state, were shown as curiosities, about Christmas. It is to be remarked, however, that we have had very little severe weather, till within the last week. Would it be worthy a trial, to deprive the fruit-trees, or some of their branches, entirely of leaves, about the beginning of September, or earlier, to observe whether the like phenomena would follow?

*Charleston, December 18th,
1804.*

As a valuable supplement to the preceding paper, it may not be amiss to give, in this place, Bernard Romans's observations on the great hurricane of 1772,

especially as the original work* is so little known, either in America or in Europe.

" The fatal hurricane of August 30th, 31st, September 1st, 2d, 3d, anno 1772, was severely felt in West-Florida. It destroyed the woods, for about 30 miles from the sea-coast, in a terrible manner: what were its effects, in the unsettled countries to the eastward, we cannot learn. In Pensacola, it did little or no mischief, except the breaking down of all the wharfs but one; but, farther westward, it was terrible. At Mobile, every thing was in confusion: vessels, boats, and logs were drove up into the streets a great distance; the gullies and hollows, as well as all the lower grounds of this town, were so filled with logs, that many of the inhabitants got the greatest part of their yearly provision of firewood there; all the vegetables were burned up by the salt water, which was, by the violence of the wind, carried over the town, so as, at the distance of half a mile, it was seen to fall like rain; all the lower floors of the houses were covered with water, but no houses were hurt, except one, which stood at the water-side, in which lived a joiner: a schooner drove upon it, and they alternately destroyed each other. But the greatest fury of it was spent on the neighbourhood of the Pasca Oocolo river. The plantation of Mr. Krebs there was almost totally destroyed. Of a fine crop of rice, and a large one of corn, were scarcely left any remains;

* A Concise Natural History of East and West-Florida, &c., &c., pages 4—7. New-York: 1776.

the houses were left uncovered ; his smith's shop was almost all washed away ; all his works and out-houses blown down ; and, for 30 miles up a branch of this river, which (on account of the abundance of that species of cypress*, vulgarly called white cedar) is called Cedar river, there was scarce a tree left standing. The pines were blown down or broke ; and those which had not entirely yielded to this violence were so twisted, that they might be compared to ropes. At Botereaux's cow-pen, the people were above six weeks consulting on a method of finding and bringing home their cattle. Twelve miles up the river, live some Germans, who, seeing the water rise with so incredible a rapidity, were almost embarked, fearing a universal flood : but the water not rising over their land, they did not proceed on their intended journey to the Chactaw nation. At Yoani, in this nation, I am told, the effects were perceivable. In all this tract of coast and country, the wind had ranged between the south-south-east and east ; but farther west, its fury was between the north-north-east and east. A schooner, belonging to the government, having a detachment of the sixteenth regiment on board, was drove, by accident, to the westward, as far as Cat-Island, where she lay at an anchor, under the west point. The water rose so high, that, when she parted her cables, she floated over the island, the wind north by east, or thereabout. She was forced upon the Free-mason's-Islands, and lay about six weeks before she was got off : and if they had not

* *Cupressus Thyoides.*

accidentally been discovered by a hunting boat, the people might have remained there, and died for want, particularly as water failed them already, when discovered. The effect of this different direction of the current of air or wind was here surprising. The south-easterly wind having drove the water, in immense quantities, up all the rivers, bays, and sounds to the westward, being here counteracted by the northerly wind, this body of water was violently forced into the bay of Spirito Santo, at the back of the Chandeleurs, Grand Gozier, and Breton Isles; and not finding sufficient vent up the rigolets, nor down the outlets of the bay, it forced a number of very deep channels through these islands, cutting them into a great number of small islands. The high island of the Chandeleur had all the surface of its ground washed off; and, I really think, had not the clay been held fast by the roots of the black mangrove, and, in some places, the myrtle (*Myrica*), there would have been scarce a vestige of the island left. At the mouth of Mississippi, all the shipping was drove into the marshes: a Spanish brig foundered and parted, and a large crew was lost: some of the people were taken from a piece of her at sea, by a sloop from Pensacola, a few days after. In the lakes at Chef Menteur, and in the passes of the rigolets, the water rose prodigiously, and covered the low islands there two feet; at St.-John's creek, and New-Orleans, the tide was thought extraordinary high: but, at all these last places, there was no wind felt, being a fine serene day, with a small air from the eastward.

“ The most extraordinary effect of this hurricane was the production of a second crop of leaves and fruit of all the mulberry-trees in this country : a circumstance into which I very carefully enquired, but could not learn, from the oldest and most curious observers, that this had ever happened before. This tardy tree budded, foliated, blossomed, and bore ripe fruit, with the amazing rapidity of only four weeks time, immediately after the gust, and no other trees were thus affected.”

VII. *Observations on the Mammoth, or American Elephant. In a Letter to the EDITOR, from the Right Reverend Bishop MADISON.*

ONE of those facts has lately occurred, which the naturalist knows best how to appreciate, and which I, therefore, take a pleasure in communicating to you. It is now no longer a question, whether the Mammoth was a herbivorous or carnivorous animal. Human industry has revealed a secret, which the bosom of the earth had, in vain, attempted to conceal. In digging a well, near a Salt-Lick, in Wythe-county, Virginia, after penetrating about five feet and a half from the surface, the labourers struck upon the stomach of a mammoth. The contents were in a state of perfect preservation, consisting of half masticated reeds, twigs, and grass, or leaves. There could be no deception ; the substances were designated by obvious characters, which could not be mis-

taken, and of which every one could judge ; besides, the bones of the animal lay around, and added a silent, but sure, confirmation. The whole rested upon a lime-stone rock. I have not seen, as yet, any part of those contents ; for, though I was within two days' journey of the place where they were found, I was so well satisfied with the narration of gentlemen who had seen them, and upon whose veracity, as well as accuracy, I could rely, that I thought the journey unnecessary ; especially as I took measures to ensure the transmission of a sufficient quantity of the contents, together with all the bones, to Williamsburgh. When the contents arrive, a part shall be forwarded to you. I hope to form a complete skeleton of this vast animal, having given directions to spare no labour, in digging up every bone.

We should not be surprised, that these substances should be thus preserved, when we recollect the state of the rhinoceros, mentioned by Pallas. Blumenbach, in his *Manuel d'Histoire Naturelle*, vol. 2. p. 398 (traduit par Artaud), has a note, which is very applicable to the present subject. He says, “ Quelquefois on trouve encore des pièces animales qui ont conservé, sans alteration, leurs parties molles ; mais, cependant, comme elles se trouvent aussi enfouies dans la terre par la suite de ces grandes catastrophes des temps antérieurs, on doit les ranger parmi les corps pétrifiés, dans le sens le plus étendu. Je citerai, par exemple, le rhinoceros deterré près de Wiloi, en Sibérie, qui offroit encore des restes très-reconnoissables, même ayant encore l'odeur animal de muscles, de chair, de

peau, & de poils. Pallas l'a décrit très-exactement dans les Nov. Comment. Petropolit., tome 13. p. 585."

Whether this first kind of petrifaction, of which Blumenbach speaks, and which he calls *simplement calcinés*, has been the cause of the preservation of these substances, or whether it be the effect of the marine salt, with which the earth, where they were buried, has been constantly charged, must be left to future investigation. I pretend not to decide. Had they been buried deep in the earth, that circumstance alone might have prevented a decomposition; but the depth of five or six feet seems insufficient to arrest that chemical action, which changes the appearances of organized bodies. The fact, however, is decisive, as to the principal question. It has summoned the discordant opinions of philosophers before a tribunal, from which there is no appeal.

Williamsburgh, October 6th,
1805.

NOTE ON THE PRECEDING PAPER. BY THE
EDITOR.

Mr. Francis Nevil, in his account of the Elephan-
tine teeth that were discovered in the north of Ire-
land, early in the eighteenth century, has mentioned
some facts relative to the long preservation of vegeta-

ble matters, which seem worthy of our notice in this place: and the more so, as this gentleman's paper seems not to have excited any attention among the modern writers on the exuviae of animals found in countries, in which the living animals themselves are no longer seen. Some extravagant conjectures are mixed with Mr. Nevil's account: but these do not, in the least, invalidate the truth of what he says, relative to the bed upon which the Irish elephant was laid.

"The place (says he) where this monster lay, was thus prepared, which makes me believe it had been buried, or that it had lain there since the deluge. It was about four foot under ground, with a little rising above the superficies of the earth, which was a plain under the foot of a hill, and about thirty yards from the brook* or thereabout. The bed whereon it lay had been laid with fern, with that sort of rushes here called sprits, and with bushes intermixed. Under this was a stiff blew clay on which the teeth and bones were found: above this was first a mixture of yellow clay and sand much of the same colour; under that a fine white sandy clay which was next to the bed: the bed was for the most part a foot thick, and in some places thicker, with a moisture clear through it; it lay sad and close, and cut much like turf, and would divide into flakes, thicker or thinner as you would; and in every layer the seed of the rushes was as fresh as if new pulled, so that it was in

* "A small brook that parts the counties of Cavan and Monaghan."

the height of seed-time that those bones were laid there. The branches of the fern, in every lay as we open'd them, were very distinguishable, as were the seeds of the rushes and the tops of the boughs. The whole matter smelt very sowre as it was dug, and tracing it I found it 34 foot long and about 20 or 22 foot broad."—“I forgot to mention that there was a great many nut-shells found about the bed, perhaps those might have been on the bushes which composed part of the bed*.”

VIII. *Notices of the Warm-Springs in the county of Bath, in Virginia. Communicated to the EDITOR by Bishop MADISON.*

THE situation is in a valley, amidst a vast chain of mountains. The soil, immediately around the spring, is rich and black; but the general appearance of the earth, upon the hill sides, is that of a yellow clay. Lime-stone, and stones containing iron, are every where seen in the neighbourhood of the spring.

1. The temperature, from frequent observation, is said to be 96° of Fahrenheit. The transparency of the water is perfect. Its relative density could not be ascertained, as none of the various means of making an experiment, with any accuracy, could be obtained.

* A Natural History of Ireland, in three parts, by Dr. Gerard Foote, Thomas Molineux, M. D. F. R. S. and others. Pages 128—130. Dublin: 1755.

2. Its smell and taste are hepatic, though not strongly so.

3. Dr. Barton tried the effect of the water upon small fish: they died, after the immersion, within fifteen or twenty seconds, previously giving indications of great uneasiness.

4. Sal soda rendered the water very milky; flakes, or curdles, soon ensue, and a white precipitate is formed in a short time. The precipitate has a soapy feel, before it is perfectly dry; when dry, it has the taste of chalk, or rather magnesia: upon being rubbed between the fingers, grit is perceived.

5. In the water, upon which the sal soda has acted, fish live as long as in common water, discovering no uneasiness. The taste and smell also, after the precipitation has taken place, differs but a little from common water.

6. Lime-water produced white clouds, and a white precipitate. Soap had the same effect.

7. Sugar of lead renders the water remarkably milky, and soon gives a considerable white precipitate. It had nearly a similar effect upon the common lime-stone water.

8. Solution of potash also formed white clouds, and gave a whitish precipitate.

9. The air, which rises in frequent bubbles from the bottom of the spring, was collected, and then agitated with lime-water: white flakes were produced, and a white precipitate. The air extinguishes flame.

10. Oak leaves turn the water, very quickly, to a brownish red colour. After standing all night, a rainbow-coloured pellicle is formed on the surface.

11. The water, when boiled, loses its hepatic smell and taste; but turns, instantly, milky, upon adding a little of the sugar of lead. White flakes are also formed with lime-water.

12. Oak leaves render the water, which had been previously acted upon by lime-water, and which was carefully poured from its precipitate, almost black: curdles are formed, and a very considerable ochreous precipitate ensues.

13. Green vitriol, dissolved in the water, produces no sensible effect; but, upon adding a little lime-water, a deep green is instantly struck, curdles appear, and a copious precipitate takes place. The precipitate which was collected by filtration, before it is quite dry, is saponaceous, and stains the fingers, when rubbed upon them, with a bright red. When the precipitate becomes dry, a part is black, the remainder has the appearance of oxyde of iron. The quantity of vitriol dissolved was very small; not more than half a grain in half a pint of the water.

14. The water, upon standing twenty-four hours, loses its peculiar smell and taste; but gives no deposit, after remaining at rest twice that time. It may, however, here be observed, that the stream, which flows from the spring, and which forms no inconsiderable run, in its passage, for a mile and more, deposits calcareous earth, in such quantity, as to form many little falls, or cascades. The quantity deposited is, however, greatly inferior to that which takes place in the Sweet-spring waters.

15. The water, though drank in considerable quantity, excites no nausea, but sits light upon the stomach. With some persons, its purgative effect is very strong; but with others, no such effect is produced. The bathing is delightful, and never fails to enliven, and to give a glow to the whole frame.

The want of necessary materials prevented any further attempt to ascertain the contents of this water. We could only make use of such means as casually presented themselves. But, from the few experiments made, it appears, that the water contains carbonic acid, sulphate of magnesia, and iron, together with calcareous earth. The relative proportion of each could not be ascertained by any means within my power.

1802.

IX. *Note on the Natural History of the substance called Guano. By the EDITOR.*

MESSRS. FOURCROY and Vauquelin have lately analysed a mould, found at the depth of more than fifty feet, in some desert islands of the South-Seas, and which is employed as manure on the coasts of Peru, where it is called *Guano*. “ This analysis (says Mr. Cuvier) has so great a resemblance to that of pigeons’ dung, that there is reason to believe, with Mr. Humboldt, who brought this *guano* to Europe, that it is nothing but the excrement of birds, which frequent these islands in immense numbers*.”

There seems to be little doubt, that the guano examined by the illustrious French chemists is, indeed, an animal substance, or, at least, the excrement of birds. This was asserted by the learned Jesuit, Acosta, in his *Natural and Moral History of the East and West-Indies*, published about two hundred years ago. In this work, after giving an account of the manner in which the Americans made their pictures of the feathers of Humming-birds and other small birds, he proceeds thus: “ There are other birds at the Indies, contrarie to these of so rich feathers, the which (besides that they are ill favoured) serve to no other use but for dung, and yet perchance they are of no lesse profite. I have considered this, wondering at the providence of the Creator, who hath so appointed,

* See Tilloch’s Philosophical Magazine, for July, 1805. p. 177.

that all creatures should serve man. In some Islands or *Phares*, which are joyning to the coast of Peru, wee see the toppes of the mountaines all white, and to sight, you would take it for snow, or for some white land, but they are heapes of dung of sea fowle which go continually thither: and there is so great abundance, as it riseth many elles, yea, many launces in height, which seemes but a fable. They go with boates to these Islands, onely for the dung, for there is no other profite in them. And this dung is so commodious and profitable, as it makes the earth yeelde great abundance of fruite. They cal this dung *Guano*, whereof the valley hath taken the name, which they cal *Limaguana*, in the valleys of Peru, where they use this dung, and it is the most fertile of all that countrie. The quinces, pounganets, and other fruities there, exceede all other in bountie and greatness; and they say, the reason is, for that the water wherewith they water it, passeth by a land compassed with this dung, which causeth the beautie of this fruite. So as these birdes have not only the flesh to serve for meate, their singing for recreation, their feathers for ornament and beautie, but also their dung serves to fatten the ground. The which hath been so appointed by the soveraigne Creator, for the service of man, that he might remember to acknowledge and be loyall to him from whom all good proceedes*,”

* The Naturall and Morall Historic of the East and West Indies, &c. Pages 311, 312. London: 1604.

With respect to the particular species of birds whose dung the guano is, Acosta does not satisfy us: but as they are said to be "sea fowle," we may venture to suppose, that they are different species of Gulls (*Larus*), Shags (*Pelecanus*), Duck and Goose (*Anas*), Flamingo (*Phaenicopterus*), &c., &c. Species of all these genera are common on the coast of Peru.

We can the more readily believe what we are told concerning the enormous collections of Guano, from what we know of the quantities of similar substance that are often met with in different parts of the United-States. Every North-American has seen, and every naturalist has heard of, the prodigious flocks of Wild-Pigeons (*Columba migratoria*) which annually pass through the United-States. "In the year 1778, they appeared (says Loskiel) in such great numbers, that the ground under their resting-places was covered with their dung above a foot high, during one night*."

X. *Facts and Observations relative to the North-American Woodcock. Communicated to the EDITOR by Dr. JOHN VAUGHAN and Mr. ROBERT MILLIGAN, both of Wilmington, in the state of Delaware.*

DEAR SIR,

THE enclosed note contains the description, promised you by Mr. Milligan, of the evening flight

* History of the Mission of the United Brethren among the Indians in North-America. Part 1. Page 93. London: 1794.

of the Woodcock (*Scolopax Rusticola. L.*). This entertaining fact was unknown to me, until mentioned by Mr. Milligan; and I was highly diverted with the singular and animated wooings of the male. His spiral flights were frequent, vociferous, and repeated with impassioned agitation, until the female came flitting towards him, and, in a modest tone, chattering consent.

It is a generally-received opinion, that “the return of the sexual passion, among birds, is announced by the frequency, loudness, and variety, of their notes: hence M. Buffon concludes, that there is, in these animals, a strong connection between the organs of generation and those of the voice; and that the delightful harmony of the grove, so much admired by man, is the natural expression of their loves. The language of the male, in this season of enjoyment, is most loud and copious: to his calls of allurement, the female expresses her assent in more feeble and interrupted notes.”

The grallæ being monogamous, accounts for the ardour of the male, and the hesitating modesty of the female, woodcock. The bargain, for the season, requires more deliberation than the transitory loves of gallinaceous profligates.

Yours, &c.

JOHN VAUGHAN.

Wilmington, June 12th, 1805.

About 40 minutes after sun-set, we arrived at the spot, where we expected to hear the woodcocks.

Presently we heard several, in different directions, calling in a note that sounded like the word "quake," pronounced long. We attended particularly to one, that seemed, from his note, to be about 100 yards from us, in an open field. The grass was long, and the light beginning to fade, we could not distinguish him very well.

After calling five or six times, pausing eight or ten seconds between each call, he ascended into the air in an oblique course, till he rose 2 or 300 yards above the field; there he continued several minutes flying in a circle, and singing in a beautiful manner. As he descended, he narrowed his circle, and varied his note, till he came within 100 yards of the ground, when he threw himself perpendicularly down to the spot from whence he had risen. He repeated these flights several times, calling eight or ten times between each flight; at length the female came, and, after a few notes of congratulation, they ascended together, almost perpendicularly, 100 yards, and then, taking a horizontal course, disappeared.

The woodcock ascends with a uniform note, like the ringing of a very small bell; at his greatest height, he has a variety of notes, some of which exceedingly resemble those of the English sky-lark.

XI. *An Account of the Introduction of the Vaccine Disease into the Isles of France and Reunion. In a letter to the EDITOR from M. LABORDE, M. D.*

SIR,

YOU requested me to send to you, before my departure from New-York, an account of the introduction and of the success of Vaccination, in the Isles of France and Reunion. I the more readily comply with your request, as this communication with you carries me, in imagination, to the city of Philadelphia, which I am sorry I was obliged to leave so soon.

* * * * *

The dreadful effects of the Small-Pox (an epidemic foreign to the Isle of France, and introduced there by avarice and crime) made me desirous to hasten the moment when I might make my fellow-citizens enjoy the advantages of a sure method of freeing them from this terrible scourge. I had been a witness to the variolous epidemic which had, in 1792, swept off one fourth of the population, although (inconsiderately, in my opinion, in the height of the epidemic) great exertions were made to propagate it by *inoculation*. The Isle of Reunion was perfectly preserved, by cutting off all communication, instead of attempting its preservation by inoculation, a step which had been advised.

As soon as I heard of the discovery of Jenner, the experiments of Woodville, &c., I wrote to the latter;

I invited him to become the benefactor of the colony. I also wrote to France. The war rendered communications difficult. At length, a French captain, coming from India, had the good fortune to preserve the *virus* fresh, by successive vaccinations made from arm to arm, during the voyage. He had also brought impregnated threads. I made a completely-successful use of both sources, in the Hospital of the State. It was from these vaccinations, that I was enabled to furnish virus to the medical practitioners of the colony.

The transmission was equally successful in every quarter. Its operation was visible between the 4th and 5th day ; and it was always from the commencement of the 8th to the close of the 9th day, that the virus in the pustule was of a clearness and gumminess fit for transmission.

We have known of no adverse case in this practice, which has become general in the Isles of France and Reunion. It has been tried upon persons of every age ; upon infants, from the 5th day after birth ; upon pregnant females, without any preparation, or subsequent medical treatment ; and the effect of the operation has, in almost every instance, been so light as scarcely to prove an inconvenience. There are some few examples of a more violent effect, and two or three of convulsions : *but not one of its ever proving mortal.* I ought to observe, that I have practised vaccination upon persons already sick, weakened, with

engorgement, &c., but without effecting a cure of those disorders, as some practitioners have announced.

Some months after the introduction of vaccination, many children, who had passed through it, had eruptions, not belonging to any class of disorders ; many had slight fevers, and some had sore-throats. The public mind now became uneasy, and feared that a new cutaneous virus had been introduced : and some complained, that the physicians did not *prepare* their patients ; or, at least, purge them *afterwards*. But all these inconveniences having disappeared, with the change of season ; and having appeared in the same manner, among children who had not been vaccinated, confidence was unanimously restored, and I believe I am correct in saying, that, except those recently born, and those who daily arrive, *there is not, in the Isles of France and Reunion, a single individual who had not had the small-pox, that has not been vaccinated.*

A circumstance very favourable to the confirmation of this confidence arose from my being able to exhibit to the Colony, a very remarkable proof of the efficacy of the new practice.

A ship stored with Negroes arrived at the Island, with the small-pox on board. Fifteen or eighteen persons had already died of it : a like number was, at that moment, under the effects of the confluent sort, and the number every day increased. It was impossible to admit this vessel, both on account of

the number of persons, who, at this time, had not been vaccinated, as well as on account of the *then* want of confidence in the protecting power of vaccination. It was necessary, therefore, to make the ship perform a quarantine at one of the Schychedelles.

I placed on board six children of those *first* vaccinated. I directed the surgeon (whom I had placed on board the vessel for this purpose) to keep these children constantly among those who were infected with the small-pox ; to make them eat and drink out of the same plates and cups ; to make them wear the linen of the sick ; and, finally, to inoculate them frequently with variolous matter. I likewise caused to be taken on board, a child, that had been vaccinated, and the matter of whose pustule was in the proper state for communication, in order to vaccinate forty of the negroes, who had not then taken sick. The result of these trials was, that the six vaccinated children were completely preserved, and that the success which attended the vaccination of the blacks was so perfect, that the small-pox became extinct. There were no more sick after the second day : many of them took the vaccine, and had the pustule. It had no effect upon others, these having, no doubt, already had the small-pox.

I feel happy in believing, that the knowledge of this fact (which is familiarly known to the whole Colony) will appear to you of a nature to subdue the most refractory unbelievers in the preserving power of the vaccine disorder. I know not the prevailing opinion

relative to this practice in the United-States; but I hope it will become universal; that, quitting inoculation, which perpetuates the variolous infection, they will adopt VACCINATION, which destroys it.

I remain, &c.

LABORDE, D. M.

New-York, August 29th,

1805.

NOTE.

In a future number of this work, I shall endeavour to collect, into one view, the sentiments of the practitioners of medicine, in every part of the United-States, relating to the usefulness and the progress of vaccination, in this great tract of country. In the mean while, it is but just to observe, that the practice has not become so extensive as might have been imagined. It is even doubtful, I think, whether, in Pennsylvania, at least, within the last twelve or fifteen months, as great a number of children and others have been submitted to the vaccine influence as in the twelve or fifteen months preceding. Various circumstances have contributed to arrest the progress of the new practice. Among these may be mentioned, 1. the appearance of glandular swellings, or cutaneous eruptions, in many of the children who have been vaccinated; and, 2. the alarms excited by reports of the communication of small-pox, to persons after they

had completely passed through all the stages of the vaccina.

But it is very certain, that many children who had never been vaccinated, have been affected with similar swellings and eruptions, in the United-States, as well as in the Isles of France and Reunion ; and, consequently, that there does not appear to be any *necessary* connection between these affections and the effects of the virus of the vaccine disease. It is impossible to urge this important truth with too much zeal ; not merely to remove or weaken the prejudices of the more uninformed class of our citizens ; but to awaken the exertions of some very respectable practitioners, who, governed by the prejudice which I have mentioned, have either refused to *continue*, even after having begun, the practice of vaccination ; or who *linger* in the practice, with a listless indifference, or carelessness.

I cannot pretend to deny, that there have not occurred, in Pennsylvania, *any* cases of the communication of small-pox (either by inoculation or by the natural infection) to persons who had been vaccinated, and who had passed through all the stages of the disease. The *whispers* of some of our practitioners on this subject have been heard. But why are they not heard more *distinctly*? On a point of such magnitude, it is the duty of every candid physician, attached to his profession and to truth, to speak with confidence, where his experience has been sure and

correct; or to communicate his mere doubts, with an open but becoming caution.

As the Editor of the *Philadelphia Medical and Physical Journal* (a work which has now a very considerable circulation through the United-States), I shall gladly receive any facts or doubts tending to invalidate the efficacy of the vaccine, as a preventive of the variolous disease. I hope, and believe, that the catalogue of such facts (at least) will not be considerable. I am even inclined to believe, that the invitation which I have thus given, *will essentially contribute to promote the practice of Vaccination in the United-States.*

The following observations, by a respectable British practitioner, are by no means favourable to the importance of the Jennerian discovery. They are here republished from a printed paper, circulated among his friends, by the author. The concluding part of the paper, in small letter, is from some MS. additions by the author himself.

XII. Facts and Observations tending to disprove the efficacy of the practice of Vaccination, as a preventive of Small-Pox. By Mr. JOHN BIRCH, Surgeon, in London.

Magna est Veritas et Prævalebit.

HAD the inoculation for what has been called cow-pox succeeded, agreeably to the sanguine promises and expectations of its advocates, I should have thought myself called upon to recant the opinion I gave to the committee of the House of Commons, and to apologize for having persevered in it; but as the experiment has failed in several instances, and the truth can no longer be concealed from the public, I think it necessary to appeal to the judgment of discerning persons, whether I have not been treated with much injustice, for firmly maintaining an opinion for which I had such strong grounds.

It was a maxim, handed down to us while I was a student at St. Thomas's Hospital, "Never to sacrifice experience to experiment;" and, therefore, in diseases, for the treatment of which time and observation had laid down a rule of successful practice, I am cautious how I exchange this for new opinions.

The judicious manner in which my excellent friend, Baron Dimsdale, managed the inoculation for small-pox, had long convinc'd me, that if any man deserved well of his country, he was entitled, at least, to the

thanks of the legislature ; and the opportunities I had of making myself acquainted with his opinions, taught me to listen with caution to any new practice, which was to overturn all I had made myself master of.

When, therefore, it was proposed to me, to *introduce a new disease into the human system*, I hesitated; but, on the assurances given to me, that it was still milder than the inoculated small-pox, was productive of no ill consequences, and would equally arrest the progress of variolous infection, I consented that Abraham Howard, the first child mentioned at my examination, should be vaccinated. The cow-pox terminated successfully, but the child afterward sickened, and had an eruption, which I considered the small-pox, though others called it an *hybrid eruption*, an appearance which, I was told, had been described as not uncommon at the Small-pox Hospital, when the patient had been previously in a variolous atmosphere.

Two other cases*, however, were followed by distinct and unequivocal small-pox, after vaccination, and then it was admitted, that the cow-pox would not arrest the progress of variolous infection ; although it is well known, inoculation of the small-pox, within a limited period, will *supersede* and *subdue* it.

These cases ascertained, that there was no such thing as an hybrid or mulish eruption, but that what had been called so, at the Small-pox Hospital, was the real small-pox.

* Will. Rinch, M. Solloway. Vide report.

I appeal, therefore, to persons of discernment, whether such mistakes, in the outset of a new practice, were not sufficient grounds for a cautious man to admit some doubts of the danger of introducing a new disease into the human system. The opinion which I gave to the committee was supported by such proofs, in the answers sent to their enquiries, and published in their report, from Messrs. Slater, of Wycomb, Grovesnor, of Oxford, Nooth, of Bath, and Dr. Hope, of Haslar Hospital, that what I have seen and heard since has only served to determine me not to be misled by the fashionable rage.

The steady and single opinion I have maintained, in opposition to this practice, has brought me acquainted with some new eruptions, abscesses, and disorders, which I had not before observed; but these accidents are generally attributed to a *spurious* sort of cow-pox. This is a term I do not admit of; I know of no such thing as *spurious* small-pox, *spurious* lues venerea, *spurious* scrofula. We are yet left unsatisfied, as to the nature and origin of what is called cow-pox. It is a disorder known only to the cow-doctor, in dirty dairies, though we are taught to play with it as a blessing revealed from heaven to this enlightened age.

If I wished to corroborate the grounds for my doubts, I might mention an almost equally fashionable rage, which had seized too many of the faculty, previous to the appearance of cow-pox, in favour of the nitrous acid, as a remedy for the venereal disease. Mercury was no longer to be called in aid, and the press teemed

with publications, to prove the mistaken opinions of hospital surgeons. This novelty I resisted, with equal firmness; here I was unwilling to give up *experience* for *experiment*, wanting nothing more safe or certain than mercury, which, for so many years, in the practice of so many competent judges, had proved an antidote to that malignant poison. The advocates for the nitrous acid are now no longer heard of; the books on the subject no longer regarded.

Sacrificing, therefore, every consideration to my actual opinion, I have avoided the practice of vaccination, but I have watched the result of it. I do not mean to enter into the proofs of its failures, or mistakes: Mr. Goldson has published some, in a very candid pamphlet; more are expected from another pen; and unless the first projectors have something better to say, than what has yet been said, to reconcile the public mind to those cases of Mr. Hodges' children, in Fullward's Rents, Holborn, I shall continue firm in the opinion I gave to the committee of the House of Commons, *That what has been called the cow-pox is not a preservative against the natural small-pox.*

JOHN BIRCH.

Spring-Gardens, October, 1804.

A child, vaccinated by Mr. Ring, exposed to variolous infection often, caught the natural small-pox, four years after, and had it full. Mr. Ring saw and acknowledged it, and I attended it.

An eminent practitioner at Harrow on the Hill, Middlesex, vaccinated his child, inoculated it three successive springs, without

effect; but, on reading my paper, inoculated it a fourth time, and the child had the small-pox.

I have the positive authority of Baron Dimsdale to say, the natural small-pox never occurs a second time.

J. B.

XIII. *Facts and Observations relative to Small-Pox and to (Varioious) Inoculation. By Dr. FRANKLIN*, and by the late Mr. GEORGE R. MINOT, of Boston.*

INOCULATION was first practised in *Boston* by Dr. BOYLSTONE in 1720. It was not used before in any part of *America*, and not in *Philadelphia* till 1730. Some years since, an enquiry was made in *Philadelphia* of the several Surgeons and Physicians who had practis'd Inoculation, what numbers had been by each inoculated, and what was the success. The result of this enquiry was, that upwards of 800, (I forget the exact number) had been inoculated at different times, and that only four of them had died.—If this account was true, as I believe it was, the reason of greater success there than had been found in *Boston*, where the general loss by Inoculation used to be estimated at about one in 100, may probably be from this circumstance; that in *Boston* they always keep the distemper out as long as they can, so that when it comes, it finds a greater number of adult subjects than in *Philadelphia*, where

* In 1759.

since 1730 it has gone through the town once in four or five years, so that the greatest number of subjects for inoculation must be under that age.

"The year 1752 (says Mr. Minot) was rendered remarkable by the spreading and termination of the small-pox in the towns of Boston and Charlestown*. It is well known, that Doctor Boylston had the merit of first introducing the practice of inoculation to the capital, from an account which he met with of its success in Constantinople. The prejudice against this salutary invention ran as high as superstition could well carry it; but, like other groundless apprehensions, it has been worn away by time, and left no other effect behind it, than adding to the fame of those whose characters it had maliciously attempted to destroy. The result of the disease was, that in Boston 5,059 white persons, and 485 blacks, suffered themselves to be seized with it in its natural course, of whom 452 whites, or upwards of one in eleven, and 62 blacks, nearly one eighth, died. 1,970 whites, and 139 blacks, were inoculated. Of these only 24 whites, the proportion of about one in eighty-two, and 7 blacks, not one in twenty, died. Even this demonstration, however, did not extinguish the scrupulous opposition to inoculation, which may yet be traced, though by fast declining evidence, even to the present time†."

* In Massachusetts.

† Continuation of the History of the Province of Massachusetts Bay, from the year 1748. Vol. I. pages 171 and 172. Boston: 1798,

XIV. *On the preparation of a fine Sago from the root of the Arum triphyllum, or Indian-Turnip,—and on the growth of Maranta arundinacea, or Arrow-root, in the State of Georgia. In a letter to the EDITOR from Mr. EDWIN L. M'CALL, student of medicine in the University of Pennsylvania.*

SIR,

AS every discovery, tending to lighten the weight of our obligations to foreigners, will afford you pleasure, I send you, herewith, a specimen of Sago, which I obtained from the root of the Arum triphyllum, better known by the name of the Indian-turnip.

Like all the Ara, this species contains a very acrid juice, which may be separated by repeated affusions of cold water. By experiment, I have ascertained, that the proportion of pure sago to the aggregate is as one to four; two ounces of the root, freed from the exterior coat, yielding half an ounce of a pure, white, and delicately-flavoured powder.

The process for obtaining it is very simple, consisting, 1st, In peeling off the outer coat of the roots. 2dly, Reducing them to a pulp, by bruising, scraping, or grating. 3dly, Placing the pulp on a strainer, adapted to a tub, or any convenient vessel, and pouring cold water thereon, which passes through, carrying the sago and acrid juice along with it, and leaving the parenchyma on the strainer. 4thly, Separating the

mild powder from the acrid juice, by repeated ablutions. And 5thly, Pouring off the water, and drying the powder, which is now fit for use.

If, by turning the attention of the farmer to the culture or preservation of this plant, we shall derive any advantage, the obligation is solely due to you; because it was while I was reducing to practice your Botanical lectures, that I met with the Arum triphyllum.

It will, I am persuaded, heighten your pleasure by being informed, that the Arrow-root* will flourish in the United-States. Campbell Wylly, Esq., of Sapelo-Island, in Georgia, has found, by experience, that the soil of the southern sea-coast is well adapted to the constitution of this valuable plant; and I had the pleasure of hearing him assert, that a spot of land, on his plantation, not remarkable for its fertility, yielded arrow-root sago in the proportion of 1840 pounds to the acre.

Thus it appears, that the middle and southern states will, at no distant period, vie with each other in the manufactory of an article, for which we are, at present, obliged to pay an enormous price, in conse-

* This plant, the *Maranta arundinacea* of Linnæus, is a native of Jamaica and other West-India islands, and also of the continent of South-America. The amyllum, or Sago, which is prepared from its roots, is in very extensive use in many parts of the United-States. EDITOR.

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quence of its passing through many hands, and being subjected to the embarrassments of commerce.

I am, &c.

EDWIN L. MCCALL.

Philadelphia, November 2d,

1805.

XV. *Account of a singular Convulsive Affection, which prevails in the State of Tennessee, and in other parts of the United-States. Communicated to the EDITOR by FELIX ROBERTSON, M. D., of Nashville, in Tennessee.*

SIR,

BELIEVING that the gentlemen (Mr. Mac- lin and Mr. Wilkinson) to whose politeness and attention I am indebted for the account of the rise and progress of the Epidemic Chorea, will have no objection to the publication of it, I send the paper, with permission, if you deem it worthy of the place, to insert it in one of the numbers of your *Journal*. For several reasons, I have been much more concise in my *Inaugural Dissertation*, on this subject, than I could have wished; and I doubt not that those who have never seen the disease, may desire to be furnished with a more minute account of it, than that which I have given,

I am, &c.

FELIX ROBERTSON.

To Dr. Barton.

Philadelphia, May 30th, 1805,

DEAR SIR,

It is with extreme diffidence that, according to your desire, I attempt to give a history of the Rise and Progress (in this place) of the affection which your friend and correspondent, Dr. Robertson, terms *Chorea*, or St. Vitus's Dance. This diffidence arises from two circumstances, among, perhaps, many others : viz.

First, at this time, I have not sufficient leisure to reflect on, and to examine the subject ; and

Secondly (which is a more substantial reason), I really doubt whether I know any thing as to the philosophy of the subject, without which a perfect history of the affection ought not to be expected ; although I believe that (from every information that I have been able to collect) it is more prevalent here, and in the neighbourhood, than it is, or ever was, in any part of the world ; and although I have (possessing the opportunity) paid attention to it, from its first commencement to the present time. However, so far as I shall attempt to proceed in the inquiry, I will endeavour to be as impartial a relator as possible.

This disease made its appearance, in this place, early in the summer of 1803, and increased in its effects with astonishing rapidity, until the latter end of that season. Since this period, the average number of subjects, each season, has not, I think, very greatly differed from what it was at that time, there being

but little difference in the summer and the winter months.

So far from being considered as a disease, either contagious or epidemical, it has been, and still continues to be, recognized, generally, *as a favourable religious visitation from the Deity*, and is designated under the general appellation of the *Religious Exercise*.

The subjects of this exercise are mostly of the PRESBYTERIAN sect of religionists, and are very numerous in this county, there being four congregations. And of these, within such ages as are usually subject to its influence, I am satisfied, that one fourth, if not one third, or one half of them, are, and have been affected, under some one modification or other of the exercise.

Some few BAPTISTS have also been exercised; but it is remarkable, that I do not recollect to have heard of a single case among the sect denominated SECEDEERS having taken it at their religious meetings, although they are very considerable in numbers; nor do I remember a single instance of any person having taken it, except those who attended some religious meeting, or society; and almost every one has, in the first instance, taken it *in* such meetings or society.

I have known some persons as young as six or seven years of age, and others, I think, upwards of sixty, affected: but a great majority are from the age of

twelve to twenty, or twenty-five, and of the affected, there are more females than males. There is scarcely one girl in ten, between the age of twelve and twenty, that has not had, or now has, the exercise.

Of those persons who attend religious worship, and of both sexes, *the affected are very generally such as are of the most vigorous and healthy constitution.*

I do not recollect to have heard of any persons taking it in their sleep.

It has intermissions, which, however, are not regular. It does not appear with any malignant exacerbations. Some continue to have it from the first commencement of the affection.

The intermissions, in general, continue as long as the person is absent from worship. To this rule, however, there are exceptions ; for the affection frequently recurs on a surprize, from serious reflection ; from depression of spirits ; from sorrow, or from grief.

A discontinuance of the affection, for weeks or months, is frequent; and, in some instances, there is a total cessation of the affection ; while new cases are as frequently recurring.

The affected generally continue healthy ; except in some few instances, where the affection, having been

more constant and violent, appears to have weakened the person, in some measure.

The paroxysm, if it may be so termed, continues from half an hour to an hour, or upwards ; or, perhaps, as long as the meeting, which they are at, continues : but during such meeting the person will sometimes have only a single motion, or, at least, very few of them.

In respect to the mode of action or gesture, this has varied, in general, in some degree from what it was at the first appearance of the affection. Indeed, at all times since, it has been almost infinitely different, and varied in different persons, and even in the same individual. It would be impossible to give a correct historical account of the varieties of the affection. A few of its most prominent or distinguishing features is all that I can attempt to delineate, at present.

Upon the first appearance of the affection, the agitations of the men were different from those of the women. The former were sometimes seized with a trembling, so violent as to make the seats or pews, at some distance, shake. This symptom was frequently followed by (apparently) the most painful wreathings of the body and limbs, with a disposition, or inclination, to tumble about on the ground. At other times, the affected would make one or several perpendicular vaults, to the height (or perhaps a greater height) than he naturally could by a voluntary exertion. These actions were frequently accompanied by a deep, loud,

and sudden groan, or rather a mournful shout, as if he were instantly struck with some dreadful pain.

I do not recollect (of late) to have heard of, or to have seen, any who have had the trembling part of the exercise: but to that, with the others, has succeeded what has been called the *Jerks*.

This consists in a sudden inclination, or reclining, of the shoulders, and is so quick, that the head appears to move too slow for the shoulders; the primary motion appearing to be in the breast. This is common to both sexes, but with this difference, that men seldom have more than one jerk, in several minutes, or perhaps hours or weeks; whereas, a woman will frequently continue a repetition of that motion as quick, or nearly as quick, as seconds, for ten or fifteen minutes, reclining backwards as far as her feet, or some other obstacle will permit her, and bending so far forwards, as almost to touch the floor with her head. The motion, in this case, is not, in general, so violent in women as in men; except the former be peculiarly strong and robust.

Women, also, have, not unfrequently, the single sudden jerk, which is usually accompanied with a loud groan, or shout.

Numbers of both sexes have, likewise, taken what is called the *Running Exercise*. That is, the person will start and run with uncommon swiftness (having the eyes closed), for perhaps fifty or one hundred yards,

and then fall, apparently lifeless, upon the ground, and lie for several minutes, then rise, and appear to be perfectly well. This race probably continues to the utmost extent of a single breath.

There are a great many other gesticulations, mostly imitative of those actions which are common in domestic life, and chiefly peculiar to the female sex; to which are added dancing and singing. These make a conspicuous figure in the general system.

The dance is usually performed by a perpendicular motion of the body and limbs, when in an erect position, both feet rising at the same time, although sometimes the feet move *alternately*. The hands and arms are generally protruded, and frequently elevated, while the head is supinely thrown back, the eyes being closed. In the mean time she makes a continual rotation of turnings and circles; and all the movements are performed with softness, and a graceful elasticity.

During these evolutions, she generally commences her tune. This is pretty uniformly the same, and on a flat key, almost every other note touching the key, and not rising more than a fifth from the key-note. Then immediately succeeds something like swooning.

Some of the leading characteristics of the exercise, on its first appearance, as it respected women, were, that they took it with a convulsive agitation of the breast, and with apparent difficulty of breathing, ac-

accompanied by lamentable cries and ejaculations: to all which succeeded what is called the *Silent Exercise*.

In this affection, the patient, if she may be so called, sinks into a state of total inaction, her breathing being scarcely perceptible, while the complexion assumes an unusually high tinge of floridness. This stage sometimes continues above half an hour, or perhaps longer.

The subjects of all these exercises have generally the premonitory symptom (previous to the external emotion) of a compression, or weight in the chest, or about the heart. The motion gives them relief. No other complaints of corporal pain are made, and the subjects are generally pleased with it, and do not wish its abatement, in any shape whatever, a very few instances excepted. They have an uncontrollable desire of attending upon divine worship, particularly that of the social kind; and they are always impressed with serious and pious reflections at the time of exercise. Nay, the desire of praying is so strong, that even the most bashful girls are not deterred, by the presence of the greatest assembly of people, from performing that duty. This, they say, also gives them relief.

Among these people, friendship towards each other is a very remarkable characteristic feature; as is the desire, that all others should be in the same situation with themselves.

Perhaps, I ought not to have omitted to mention, that involuntary laughing was very prevalent in the autumn of 1803, and in the spring of 1804. Indeed, there can be little doubt, that all the movements, &c., of the affected, are involuntary. It is, however, equally certain, that numbers endeavour to excite and promote the exercise, among whom I may mention the principal of our clergy.

Camp-meetings are held three or four times a year, and continue four days at a time. From one to four thousand persons usually attend, and encamp upon the ground. During these meetings, sermons are preached, addressed to the passions; and singing and praying are carried on, with scarcely any intermission, day and night. The hymns are of the most passionate kind, and are accompanied with melancholy music, which, however, is of a quick movement. There can be no doubt, that this gives a powerful spring to their exercises; and, I think, among many other reasons, this is evident from the consequent different effect in the worship of the Seceders.

While I was just writing the above, a neighbouring countryman came in. He has himself been *severely exercised* since the first commencement of the affection. I asked him some questions, and his answers correspond with what I have stated respecting the desires and feelings of those who are exercised, and respecting the absence of pain. They all agree in asserting, that during these exercises, the senses remain in their full vigour; and that, even in their

silent exercises, they know every thing that is passing about them. They also say, that their mental faculties, during the paroxysms, are preternaturally active and strong, particularly the judgment and the memory: that the latter is so much so, that almost every transaction of their past lives crowds in review in the mind, especially the transactions of a vicious kind. But it is probable, that the agency of the *will*, during these periods, is much weakened, and, perhaps, in some cases, entirely suspended. This conjecture is strengthened by the fact, that when a person is in the silent exercise, if a pin or a needle be introduced through the skin, it will cause no emotion or complaint, but will produce the sensation of pain. Is it possible that this can arise from a temporary disunion of some unknown animal fluid? If so, there must (regularly) be a stronger connection between mind and matter than is generally supposed. However, this point must be left to be decided between the metaphysician and the materialist.

I do not know, that any applications have been made for medical assistance, in these affections. Yet I know one young man who lost blood for it, and the exercise left him. But whether the discontinuance took place from the bleeding, or from the circumstance of his non-attendance on religious societies, is uncertain.

I am, Sir, your's, &c.

JOHN WILKINSON.

Maryville (Tenessee), April 18th, 1805.

To Mr. William Maclin.

XVI. *Case of Hemorrhage, successfully treated by the internal use of the Acetite (or Sugar) of Lead. Communicated to the EDITOR by Dr. GEORGE WILLIAMSON, Physician in Baltimore.*

ON the 17th of April last, I was desired to see M. F., who was, as she supposed, about to miscarry. But I am inclined to believe, that she was not pregnant. Previously to her present indisposition, she had not had her catamenial discharge since the birth of her last child, who was now ten months old.—On the 14th of the month, she took a cathartic, which had been prescribed by an eminent practitioner of this place, for an affection of her throat. On the 15th, the catamenia made their appearance. On the 16th, she laboured under violent pains of the back, abdomen, &c. The catamenial discharge was now very sparing, and frequently intermitted. Not unfrequently, there were discharged large portions of coagulated blood, some of which she was under the necessity of employing some force to remove from her vagina. These discharges were almost always followed by syncope. On the 17th, she went abroad, and, while absent, was attacked with very severe pains in her back and abdomen. Soon after this, I saw her.

At my first visit, she seemed almost universally diseased. She was labouring under an hysterical affection, which seemed to partake, in a considerable degree, of the nature of mania: for although she was very small of stature, and of a delicate make, and her husband a

stout and strong man, she possessed so much strength and activity, when labouring under one of these violent attacks, as to make it impossible for him to hold her, without assistance.

* * * * *

The maniacal paroxysms often subsided in syncope, and, after recovering from one of these, she would be quite rational, for a few minutes, declaring that the excruciating pains, under which she laboured, were the sole cause of her other afflictions, and intreating me to afford her medical aid. I, accordingly, ordered her an anodyne, and left her. But I was soon sent for again.

I now found her labouring under a fit, which appeared to partake both of the nature of hysteria and of syncope. Her countenance was overcast with a death-like paleness; her eyes, to use a common phrase, were set; her stertorous breathing indicated danger of suffocation. She soon, however, recovered from this attack, by the aid of a few simple applications. But her pains were as severe as before, and the menstrual discharge in the same state.

Believing this to be a case of what the illustrious Cullen terms *Amenorrhoea difficilis*, I ordered her feet to be bathed in warm water; cloths, wrung out of warm water, to be applied to her abdomen and external parts of generation; and left for her a mixture, composed of Tincture of Opium and Assafetida. As her stomach was considerably disordered, chamomile

tea was given her as a drink. By the continual use of these remedies, she soon got better; and when I called, in the afternoon, she received me with a smile on her countenance, informing me, that she was much better; that her pain had almost entirely ceased, but that there was still remaining a considerable soreness, and that there was then a gentle flow of the menses.

About one o'clock in the morning, she awoke, much alarmed with the idea of her child's dying: she sprung up immediately in her bed, and caught up her child, which was lying by her side. In consequence of these exertions, something gave way (internally), which she compared to the sudden bursting of a bladder, previously distended with air. A most profuse uterine hemorrhage immediately took place. Upon being informed of this, I prepared several doses of the sulphate of alumine (common alum), directed cloths wrung out of cold water and vinegar to be applied to the abdomen and the external *genitalia*, and her room to be kept as cold as possible. Her drink was also cold.

This mode of treatment was of no avail. About two o'clock, when I saw her, the menstrual evacuation was so profuse, as to wet large cloths, in a few minutes, as though they had been bathed in basons of blood. She was now much debilitated, and slight attacks of syncope frequently took place. This treatment was continued, without any effect. At three o'clock I left her, and at the end of half an hour I was informed, that the hemorrhage was as profuse as ever.

In fact, every symptom appeared worse, and she was, consequently, much weaker. Being apprehensive of immediate danger, I resolved to have recourse to the Acetite of lead (Sugar of lead).

Of this medicine, accordingly, several powders were prepared, each containing two grains, with a little Armenian bole. This last was not given so much for its medical virtues as for another obvious reason. She was directed to take one of the powders, in cold water, with four or five drops of laudanum (Has not laudanum the good property of obtunding the deleterious effects of the sugar of lead?). About four o'clock my patient took the first dose, and in a very few minutes afterwards the hemorrhage ceased, and she continued free from it until about nine, when she was too much neglected, and a fire was imprudently kindled in her room. About this hour, I found her much better, though the discharge had recommenced.

I now ordered a strict adherence to the former mode of treatment, and directed another dose of the acetite of lead to be given. The relief was not quite so great as before, although it was very considerable. About noon, she had another powder, and at two, in the afternoon, she was much better. At three o'clock, she took another powder, and at five, the discharge had almost entirely ceased. Two other powders were given, in the course of the evening, and the following morning I found my patient well.

Baltimore, July 1st, 1805.

NOTE BY THE EDITOR.

In my large employment of the sugar of lead, for several years, I have very generally combined with it a portion of opium. I have always inculcated this practice, in my lectures on the internal use of the preparations of lead. I cannot but repose much confidence in the usefulness of the combination; but I am fully persuaded, that the preparations of lead, *without opium*, may be given in large doses, with entire safety, and with the happiest effects, in various diseases, particularly in hemorrhages of the *primæ viæ* and uterus.—In a case of Melaena, which lately came under my notice, in which the patient discharged, in the course of twenty-four hours, at least eighty ounces of blood, I prescribed the sugar of lead, in combination with opium and ipecacuanha. To the use of these medicines (doubtless, the lead *principally*) I cannot but ascribe the recovery of my patient. I am inclined to think, that the ipecacuanha was an useful addition, not merely from its well-known good effects in hemorrhages* (to which I can myself bear testimony), but likewise by virtue of its operation upon the skin.

* See the writings of Barbeirac, Gianella, Dahlberg, and other able physicians.

XVII. Miscellaneous Chemical and Medical Facts, Observations, and Conjectures. Communicated in a letter to the EDITOR, from JOHN BRICKELL, M. D., of Savannah, in Georgia.

I TINGED a bit of paper of a sky-blue colour by litmus, secured it round a slip of cork, had it put between the jaws of a Rattle-Snake (not quite dead), and its head pressed. The poison squirted out, as if from a syringe; the paper touched by it had its white restored, and a margin of red divided the white from the blue. Immersion of the paper in a solution of potash discharged the red, and restored the blue.

This evidence, of the poison containing an acid, indicates the propriety of alkaline remedies for the bite of these animals. I have seen them applied, successfully, in a most dreadful case, in which *Prenanthes alba*, and other remedies, had failed.

As the serpent's teeth, by their structure, may deposit the poison below the surface, the incumbent flesh ought to be removed, that the remedy may have access to the venom. For this purpose, the application of a hot iron seems eligible.

Persons bit by dogs, suspected of rabies, have been treated on the same plan, from my not knowing any (apparently) more reasonable. No harm has ensued.

I have been waiting for an opportunity of examining, by chemical tests, the saliva of rabid dogs; but none has occurred here, for many years: and as all the carrion here is interred, and our dogs are not very numerous, and pretty well fed, and free to go in quest of weather-beaten bones, which help to neutralize the acid in their stomachs, an occasion for making this experiment may not soon present itself.

The slaver of the rabid animal ought to be washed off the skin, by dashing on it ley or water, as soon as possible; and especially previously to any operation. A surgeon (of Edinburgh) in cutting out the bitten part, probably from the consequences that ensued, inoculated by his knife, not having taken the precaution to wash off the superficial saliva, previously to the excision.

I have seen alkali applied to the bite or sting of a spider. The pain, which was considerable, vanished immediately.

The *Prenanthes alba*, the famous Indian cure for the bite of venomous serpents, is here called *Gall of the Earth*. Its alkali appears to be extricable in the herbaceous state. Its leaves are lactescent, and every part of the plant is intensely bitter.

We find alkali in bile, and in the human stomach, in pyrosis sputatoria, without the agency of fire. Its effects in sickening the stomach, are removeable by acid of any kind, or by sour vegetables.

Some of our planters take a little water in which a few of the bruised seeds of the Argemone Mexicana* have been steeped, as a more certain emetic than ipecacuanha. A large dose is apt to act violently.

A gentleman here, afflicted with an obstinate hydrocephalus, underwent a long course of Digitalis purpurea, mercury, &c., but in vain; and, finally, became foolish. It was a gratifying circumstance to see him restored to his senses, and perfectly cured, in twenty-four hours, by a tincture of the seeds of our Datura Tatula. It is a most powerful hydrogogue, and acts directly on the brain, as is evident from the giddiness and peculiar sensations it excites there. The energy with which it excites the absorbents makes it an important agent. I have stated these circumstances to Sir Lucas Pepys.

I was applied to by letter, lately, for advice in the case of an elderly lady, about four or five hundred miles from this. She was far gone in a consumption. From the circumstances stated, I recommended a rigid abstinence from all fluids, and the tincture of Datura seeds, to excite the absorbents. My last letter from her brings the agreeable intelligence of her being very nearly well; from a condition thought incurable.

A friend of mine, not remarkable for steady temperance, was seized with vehement, frequent, and long-

* Or Mexican Poppy. This is a pretty common plant in many parts of the United-States, even as far north as Pennsylvania. It delights to grow in nitrous grounds.

Editor.

continued vomiting, which ultimately produced the appearance of coffee-grounds, in what he threw up. Litmus-paper showed the existence of a strong acid in his stomach, this being neutralised by carbonated soda. A vein of his arm being opened, as he was robust, and perspiration excited by flannel on his skin, he soon got well.

Here the vehement agitation of vomiting gave such impetus to the blood, that the small extreme vessels of the interior coat of the stomach were ruptured by the reiterated impulse, and small particles of blood became extravasated. Their long rout from the lungs, in which their oxygen was dissipated, and their scarlet colour lost, and the materials with which they came in contact, in the stomach, probably darkened them to the colour of coffee-grounds.

A longer continuance of vomiting, to increase the dimensions of the ruptures, and the extravasation, would have given the appearance of what is termed *black-vomit*.—Thin blood might be extravasated by less force, as at the end of typhus fever.

The destructive effects of breathing air that has been much respired, are demonstrated by the garrison of Calcutta, confined in the black-hole, or dungeon, about nine hours, by Suraja Dowlah. In that short space of time, of one hundred and forty-six healthy men, crowded together in a small unventilated room, one hundred and twenty-three lay dead. The survivors, twenty-three in number, were all in putrid fever.

I remember seeing this illustrated by an instance in Savannah. Having occasion to open the door of a chamber, in which a crowd of mechanics used to sleep, I perceived a horrid smell. Returning down stairs, I told the lady the danger of keeping the door, and all the windows, shut. Not relishing my advice, I told her, that she would have the yellow-fever in the room, if fresh air should be much longer excluded.

Some weeks after, observing the house shut up, I asked of a neighbour the cause. He told me, that the man and woman of the house, and about twenty of the boarders, died, in the course of a few days, of a fever supposed to be malignant; but that how it came, was not known, as the town was generally healthy, when they had died so fast.

We see, then, that putrid vapours and crowded situations are best avoided in warm weather especially.

I observe, by the papers, the commendable exertions, in Virginia, to improve the breed of sheep. The fine young ram, that won the prize, was to be shorn, to have the weight of his fleece ascertained.

We may remark, that men, accustomed to wear flannel next to the skin, who take it off in summer, are obliged to put it on in bad weather, or be in danger of fever, pleurisy, dysentery, or consumption, &c. Sheep cannot resume the fleece when necessary, and, under the usual management, are a sickly

animal. Sickness from this cause, which must impair the quality of the breeders, might be prevented by gently pulling off the wool, as nature gradually loosens it. The wool would be better, the health of the animal would make it fatten sooner, its flesh would be more safe and desirable food, and its increase and improvement would be facilitated. May we hope to see the day when shears will only be used on this innocent and most useful creature, to relieve it from dirt, which sometimes sticks to part of its wool ?

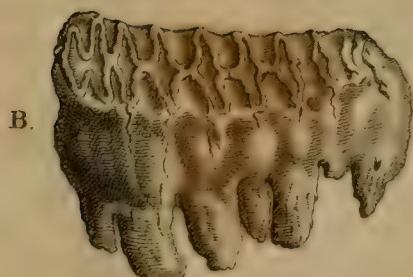
Savannah, June 5th,
1805.

XVIII. *Some Account of the Tayè, a species of Sheep.*
By the EDITOR.

THE *Ovis Aris*, or Common Sheep, is not known to be a native of any part of America. Indeed, it has often been asserted, that this portion of the world produces no species of this useful genus of animals*. There can be little doubt, however, that a species of sheep is found native in California, and other western parts of North-America. Some

* After observing, that the common Horned cattle of the old world were altogether unknown in the new world, M. de Buffon says, " America has still less pretensions to the sheep."—" Both European and African sheep have been transported to Jamaica, and have equally succeeded. These two species belong entirely to the old Continent." *Histoire Naturelle, &c. Tom. 18.*

The Taye.





of the missionary Jesuits, who visited California towards the end of the seventeenth century, inform us, that they found in that country two sorts of deer, which they call sheep, from their resemblance, in make, to the sheep of Europe. The first sort is said to be as large as a calf of one or two years old; its head is much like that of a stag, and its horns like those of a ram. Both its tail and hair are speckled, and shorter than a stag's. Its hoof is large, round, and cleft like that of an ox. The flesh of this animal is said to be very tender and delicious. The second sort differs less from the sheep of Europe. Some of them are white, and others black. They are larger than the common sheep, have much more wool, which is very good, and easy to be spun and wrought*.

In the History of California, by Venegas, there is a figure of one of these animals, which the Monqui-Indians, inhabiting that country, call *Tayè*†. This figure, if accurately represented, seems to render it certain, that the western parts of America possess a native species of the genus sheep. Whether it be a species known in any other parts of the world, is a point which we are not yet perfectly prepared to decide.

My learned friend, Professor Zimmermann, of Brunswick (in Germany), seems to entertain no doubt,

* Philosophical Transactions, abridged, &c. Vol. v. Part ii.
p. 194.

† Noticia de la California, &c. Tomo primero, p. 43, 44.

that the *Tayè*, or *Tage* (as he calls it) is the same animal as the *Argali*, or Wild sheep, which inhabits the north-east parts of Asia, and the country of Kamtschatka*. Mr. Pennant, though less positive, is of the same opinion†. This, however, appears to me to be a doubtful point. Venegas's figure rather forbids the idea, that the Asiatic and American animal are the same. The horns of the former are less incurvated than those of the latter. The abbé Clavigero says, the *Tayè* is “ unquestionably the Ibex of Pliny, described by Count de Buffon, under the name of Bouquetin‡.” This cannot be. Judging by the figure of the Californian animal, it appears to be most essentially different from the Bouquetin, which is the *Capra Ibex* of Linnæus.

I have myself received some additional information concerning the existence of a large horned animal, in all probability the *Taye*, in the country adjacent to the river Missouri, the great western branch of the Mississippi. This animal is a native of the Stony-mountains about the head-waters of the Missouri. It is said to be nearly of the size of an elk (*Cervus Wapiti*?), and of the colour of a Fallow-deer. Its horns resemble those of a ram, but are turned, in a spiral form, like a trumpet, and are of an enormous size, some of them mea-

* Specimen Zoologiae Geographicæ, Quadrupedum Domilia et Migrationes sistens, &c. p. 632, 633. Lugduni Batavorum : 1777.

† Arctic Zoology. Vol. i. p. 13, 14.

‡ The History of Mexico. Vol. ii. p. 324.

suring eight (French) inches in diameter. The animal is said to live not longer than ten or twelve years, because its horns, advancing forward in proportion as the creature grows, finally pass the mouth, in such a manner as to prevent it from eating grass, upon which alone it lives: and thus it falls a victim to its hunger. There is, doubtless, *some fable* mixed with this part of the relation.

The Horned Animal

The Indians of the country make, of the horns, spoons and cups, some of the last of which are large enough to contain a sufficiency of food for the breakfast or dinner of four men*.

The preceding account, of the horned animal of the Stony-mountains, was communicated to me, at least five years since, by Dr. John Watkins, a very intelligent physician, who at present resides in New-Orleans. In the first volume of this *Journal*†, I have made mention of the same animal, on the authority of a Mohawk Indian, who met with it in the country northwest of Detroit, and at the distance of several hundred miles from this town. Since this period, several other travellers have seen the "Mountain Ram," as it is sometimes called, in the same, or nearly the same, tract of country. Mr. Lewis, who has, for a considerable time, been engaged in exploring the country of

* We are told, that the Tartars make "great drinking-cups" of the horns of the Argali.

† Part 1. Pages 75—77.

Louisiana west of the Mississippi, has seen it in that tract of country.

The existence of a native species of sheep, in North-America, is thus sufficiently established. But it still, as I have already observed, remains to be ascertained, whether it be a species *peculiar* to this continent, or one *common* to it and to the old world. We shall, no doubt, be able to determine this point, in the most satisfactory manner, in the course of a year, at the utmost. If the Mountain Ram shall prove to be the Argali*, we shall thus have increased the list of quadrupeds that are common to the old and the new world; we shall have rendered it more probable (and at present it is highly probable), that the continents of Asia and North-America were formerly joined, and that many of the quadrupeds, as well as the human species, passed from the former into the latter portion of the world.

It deserves to be mentioned, in this place, that brazen images and stone figures of the Argali, or Wild Sheep, are often found in the graves of some of the Tartar nations, among whom, it is easy to infer, from

* " It is called, by the Kirgisian Tartars, *Argali*, perhaps from *Arga*, an alpine summit: the ram, *Guldsha*. By the Kamtchatskans, *Goádinachtsch*; and by the Kuritians, *Rikun-donotoh*, or the *Upper Rein-deer*, from its inhabiting the loftier parts of the mountains. The Russians style it *Stepnoi Barann*, or the *Ram of the Desert*; *Kamennoi*, or the *Rock-Ram*, and *Dikoi*, or the *Wild*."

DR. PALLAS.

this circumstance, that this useful animal was an object of worship, or of veneration*.

The Baron Lahontan, in his *New Voyages to North-America*†, has given an engraving of a medal, “made (he says) of a certain sort of metal of a red colour, not unlike copper.” On one side of this medal, there are some characters, or symbolic marks, not, I think, unlike those which are often met with, painted on rocks, &c., in the north of Asia: on the other side, are the representations of four animals, which appear to me to be sheep. This medal, Lahontan was informed, was made by the Tahuglauk, “who are excellent artizans, and put a great value upon such medals.” These Tahuglauk, the baron was told, reside upon a great salt-lake, far to the west of the Mississippi. His account of these people, communicated by some Indian slaves, is extremely curious; and, I have no doubt, contains, along with some fable, interesting truths. We cannot, however, but regret, that the French traveller should have had the medal “melted by Mr. de Ponti’s gun-smith, who understood something of metals‡.”

As copper articles, of different kinds, have been found in the ancient tumuli, or barrows, in the west-

* See Dr. Pallas’s *Spicilegia Zoologica*, fasc. xi. 19., and Strahlenberg’s *Historico-Geographical Description of the North and Eastern Parts of Europe and Asia*, &c. Tab. B. English translation. London: 1738. 4to.

† English translation. London: 1735.

‡ Vol. 1. pages 125, 126.

ern parts of North-America (and even to the east of the Mississippi); and as the Mexicans, and other American nations, are known to have manufactured copper into axes, and other implements, there is the less cause of suspicion as to the veracity of Lahontan, in his account of the Tahuglauk medal. And if the animals represented on this medal be, as I suppose they are, sheep, we are furnished with an additional argument in favour of the opinion, that the Americans and Asiatics are one and the same people. For we have seen, that “brazen images and stone figures” of the Argali are often discovered in the graves of the Tartars.

I must not conclude this very imperfect notice of the western North-American sheep, without observing, that between the Indian (Californian) name of this animal and the Asiatic (Tartar) name of an animal considerably allied to it, there is a striking coincidence. The Monqui name, we have seen, is *Tayè*. Now certain Tartars call the *Capra Ibex*, *Tau Tokkè*, or Mountain goat*. This coincidence will hardly be deemed altogether *accidental*, especially as both the American animal and the Ibex are mountain animals; and I find that *Tau*, or *Ta-oo*, *Taw*, and *Tag*, are the names of a MOUNTAIN in the dialects of several Tartar and other Asiatic nations†, between whose languages and those of the Americans I have, long since, pointed out some very striking affinities‡.

* Mr. Pennant's History of Quadrupeds. Vol. i. page 56.

† See the Vocabularia Comparativa of Pallas. Pars prior. p. 334.

‡ See my New Views, &c.

The annexed figure of the Tayè, which, I suppose, is the same animal that has lately been seen by Daniel Green, Mr. Lewis, and other travellers, is correctly copied from the *original* Spanish engraving in the *Noticia de la California, &c.*, published in 1757. The original work (of which there is an English translation*) is seldom to be met with, and is less known than it ought to be : it is not, indeed, a very classical work ; but it contains many things which are now, at the distance of half a century, considered as *new*.

XIX. *Character of the Elk.*

THE following Extract was transmitted to the Editor, some months since, by one of his correspondents, who at present resides in the state of New-York. It is part of a poem, of considerable extent, entirely relative to American scenery and objects of natural history. Whatever opinion may be formed of the merits of the poetry of the *Extract*, it will not be denied, that the ingenious author† discovers no small acquaintance with the manners and habits of the animal, whose character he has drawn. It is to be hoped, that he may be induced to communicate to the public the *entire* poem, which cannot fail to afford much information, as well as entertainment, to many of his readers.

* In two volumes, octavo. London: 1759.

† Mr. D. T.

The Elk, which is the subject of this communication, is a species of *Cervus*, often alluded to, but not distinctly described, by the systematic writers on natural history. A very ample account of this majestic animal will be given in the second part of the Editor's *Fragments of the Natural History of Pennsylvania*, where it is named *Cervus Wapiti*.

EXTRACT. CHARACTER OF THE ELK.

STILL round the Lake the leafless Saplings stand,
Bark'd by the stately Elk, what time their Horns
Full grown, and branching o'er their cumber'd heads,
Requir'd the polish that Attrition gives.

And there their Wallow still attracts the Eye,
Unhonour'd yet with Verdure, where they roll'd
In Summer hours, and rose disguised with Mire.
And oft from swarms of teizing flies, they sought
The cooling wave impatient, bathing high
Their sides, and feeding on *Nymphaeæ* leaves.

—Unlike the bounding Deer who loves at Eve
To quit his native shades, to scale the Fence,
And feast in verdant Grain-fields ; they abhor,
And fly with fearful steps the haunts of Man.
Fearful and yet unwatchful, they retire
To Nettle Pastures and the ruggid Hills
In social herds. There when the whitening Showers
Descend, and high accumulating, hide
The wither'd herbs ; and piling still, a Crust
Of icy Sleet denies their usual Range,

Beneath some sheltering Tree they form their fold,
And duly every Morning browse around
The trodden circle. Bending with a Load
Of Snow, the thickly-foliaged Hemlock here
Invites them ; reaching high with Horns reclined,
They pluck, but starting upward springs the Bough,
While o'er their shoulders falls the clotted Shower.
With less deception there the Maple yields
Nutritious Twigs ; and then well-pleased they rob
The slender Trip-up of its folded Leaves
Attractive. Thus they pass their Wintry days
Till Spring returning raises the Blockade.

—Chac'd by the Hunter's Dogs, alarm'd, they fly,
While fast behind the hodieous howl of War
Approaches ; near and nearer still it comes,
Till wheeling round at once in phalanx firm
They face the fierce assailants. Discord reigns,
And mingled howlings wake the lonely Woods.
Ill fares the heedless Cur : as down the steep
Some Hemlock pitches thundering on the Rocks :
So on his Back their horrid horns descend,
Or from their vengeful Hoofs sore maim'd he moves
With loud lamenting Yell. Yet hence they bleed
The Victims of the Rifle's whirling Ball.

NOTES.

They fly with fearful steps the Haunts of Man.

We perceived an Elk on the opposite shore, coming to the Lake. As soon as he approached our

Tracks, he put down his nose to smell them, and instantly retreated.

Fearful and yet unwatchful.

They do not appear to be more watchful than an ox. In the remoter parts of the wilderness, Hunters have frequently killed several before the Herd became alarmed ; but when frightened they trot many miles without stopping, unless detained by Dogs.

I passed within 40 yards of an Elk that was feeding, without being perceived till I came in front of him. He then appeared greatly frightened.

———*the thickly-foliaged Hemlock here
Invites them.*

A considerable Quantity of Hemlock was taken from the stomach of an Elk killed in the Elk Lands, in August, 1804. Some neat Cattle browse well on it in Winter.

They form their fold.

In this Case they are said to be “yarded up,” and Hunters sometimes go on Snow Shoes to attack them.

The slender Trip-up of its folded Leaves.

To call these Buds, would perhaps be a deviation from the common meaning of the Word.

————— in phalanx firm
They face the fierce assailants.

As soon as I ascended the Bank, they crowded together, and then formed in a Line facing me. Their large branching horns, added to the stateliness of their Figures, formed a View interesting enough to check the Ardour of a Hunter.

So on his Back their horrid Horns descend.

They pitch their Horns at the Dogs. The Height from which the horns must descend has induced the Idea that they strike like a Man with a Pole, which appears to be erroneous.

An Elk, killed in 1804, attacked the Dog by pushing at him in a manner somewhat similar to raking a Garden, and never raised his Horns to strike.

XX. *Case of Ptyalism (apparently) produced by the External Application of the Lunar Caustic, or Nitrate of Silver. Communicated, in a letter to the EDITOR, from THOMAS WALMSLEY, M. D., of Elizabeth (or Hager's) town, in Maryland.*

J. F., a man of sixty or seventy years of age, has formerly been of a stout frame, and strong constitution; but is now rather infirm. He has always supported an excellent character, but has indulged himself, occasionally, in a little irregularity. He has,

for a number of years, been afflicted with a dizziness in his head, with singing in his ears, with vertigo, and sometimes with pain ; with acidity in his stomach, &c.

His physicians had called his disease pleurisy in the head, nervous headach, rheumatism of the brain, and a variety of names ; but they gave him no relief. I told him instantly, that his complaints were Gouty, which, at length, I persuaded him to believe, and recommended an issue. He acceded to my proposal, but preferred the knife. An incision was, accordingly, made at the insertion of the deltoid muscle, and a pea introduced. Pus was soon formed, but never in any considerable quantity. There was a remarkable disposition to heal ; and, at the end of five or six days, the pea could not be kept in its place. Granulations had sprung up so fast, as nearly to reach the surface, and, by the pressure of the pea, the edges had become somewhat callous.

In order to increase the secretion of pus, and to destroy the granulations and callous edges, I applied (*only once*) about two drops of lunar caustic, in solution ; that is, real nitrate of silver, and then replaced the dressings. He complained of no pain or smarting, while I staid with him. About two hours afterwards, he was very sick, and said, that a short time after I had left him, he felt a *sting* in his arm, which seemed to run through his whole system (he compared it to an electric shock), since which time he has been very sick and fainty. In this state he con-

tinued until sometime in the night ; and in the morning his mouth and gums were sore. A ptyalism commenced : on the second day, it was profuse, his breath had the mercurial fetor, and his gums the common appearance. These symptoms continued three or four days, and then subsided.

Mr. F. had taken no medicine, of any kind, previously to my seeing him. Nor was there any in the house.

I had seen so many symptoms produced by gout, particularly in your own case, that I was prepared for almost any thing : but, really, this case was so singular that I could not but mention it.

*Elizabeth-Town, August 30th,
1805.*

**XXI. Observations on the Growth and Propagation of
a Proliferous Onion. By the late Mr. ISAAC GRAY,
of Kingsessing, near Philadelphia. Communicated
to the EDITOR (in 1794) by the late Mr. DAVID
RITTENHOUSE.**

IN the year 1780, a friend of mine presented me with a full-grown bulb of this onion. He said it was a curiosity of the culinary kind, in the vegetable creation ; and such it certainly is, in this part of the world : for few of them, as yet, have been cultivated here. But, perhaps, it may be deemed more curious,

as exhibiting a mode of propagation, in plants, which I believe has, hitherto, been unnoticed by the botanical writers, several of the most intelligent in that branch of science (here) having told me, that the observations now made, are wholly new to them,

As I received the root without any distinguishing name, and have examined several treatises on botany and gardening, without being able to find any account of this variety of the Allium Cepa, I have ventured to give it the above name, as designating, in some measure, the nature of the plant: but this name may give way to any other more proper, or common.

The bulb, or root, which I have mentioned, was planted in the spring of this year, in a good, but rather stiff, soil, where it soon shot up with a hollow stem, after the manner of the common onion, to the height of above fifteen inches, and there formed a cluster of small bulbs, from the centre of which there shot out another stem, like the first, to the height of about twelve inches, where there was formed another cluster of bulbs. From these bulbs proceeded a third stem, about ten inches high, upon which there grew a third cluster, proportionally smaller than any of the preceding ones. The number of bulbs, produced from one root, amounted to thirty-two.

Upon attentively observing the last cluster, there appeared to be something like *seed-vessels* shot out, about half an inch from the stem of the plant, in company with the last and smallest of the bulbs. It appear-

ed to me somewhat extraordinary, that a plant should produce bulbs (*sui generis*) together with seeds, at the same time, by which it would have appeared, that Nature was profusely generous in the means of propagating this plant.

In most, if not all, the annual and deciduous vegetables, it has hitherto appeared, that after the perfection of the seed, Nature has so ordered it, that they fall to the ground, where, after a due length of time, they germinate, and continue their different species. But in the plant of which I have given some account, nature seems to have taken another method: for although, upon viewing it, one would readily and naturally conclude, that the bulbs were produced immediately from the stem of the plant, yet, by examination, it appears, that they are produced from seed, somewhat as other plants, though after a different manner; and that a regular and proper seed-vessel, containing seed (nearly similar to those of the common onion) is previously formed, which, contrary to the common course of nature, and as if too delicate to receive the principle or impulse of germination, in the universal matrix, instead of falling off, adhere firmly to the stem of the plant; and there, in the order of Providence, without the immediate aid of the earth, as the common medium or vehicle, but by means of the atmosphere and natural succulence of the mother plant, germinate, and produce a bulb, similar to that from which it sprang.

I conclude, that, after this occult and peculiar manner, several species of *proliferous* plants must be produced. This conjecture, however, I submit to the observation and investigation of the curious.

Philadelphia, 1780.

XXII. *Hydrophobia, unsuccessfully treated by Anagallis, Mercurial Ointment, Tincture of Cantharides, Blisters, &c. Communicated to the EDITOR by Dr. BRANNIMAN, of Lancaster, in Pennsylvania.*

MATTHIAS HUEER, aged 37 years, a weaver by trade, was bitten in his left wrist, on Saturday evening, the 31st of July last, by a dog supposed to be mad. The wound was very inconsiderable, bled a little, and healed in a few days, though nothing was applied to it.

On Monday morning (August 2d), he began to take the *Anagallis arvensis*, or *Pimpernel*. Of this medicine, he took forty-five grains, in powder, at a dose, in a little beer, for four successive mornings.

He seemed a little alarmed during the first nine days after the bite; but, after that period, his mind appeared to be perfectly easy, and he seemed to entertain no fears of the consequences, as he was assured, by some persons, that, after the ninth day, no danger was to be apprehended. He now attended to his work, as usual, and seemed to be in good health.

September 14th, in the evening, he had some words with a person, who abused him, and greatly provoked him to anger. After this, he drank a gill of rye-whiskey, took no supper this evening, and had a restless night.

15th, He attended to his work as usual, but complained, that his appetite was not good. On the 16th, he went to his work, but said he did not feel well, and had no appetite. In the evening, he complained of a pain in his left arm, extending from the wrist to the shoulder. Passed a restless night. On the morning of the 17th, he went to work, which, however, he was obliged to relinquish, on account of the pain of his arm. During this day, he ate and drank but very little; and, in the night, he complained greatly of his arm, and of giddiness: but he had no headach. He was very restless, had cold sweats on his hands and face, but was not thirsty. On the 18th, he took half a cup of coffee, for his breakfast, and did not complain of any difficulty in swallowing it. This morning, about 10 o'clock, I saw him for the first time.

He now complained of great pain in his left arm and shoulder; of a numbness in his hand and fingers; of giddiness; of sickness at stomach; and of a bad breath. His tongue was white, his pulse small. No thirst. Skin cool: a cold sweat on his hands, arms, and face. He had taken no medicine since he first complained of indisposition,

I gave him an emetic, composed of

R. Ipecacuanha gr. 15. and

Calomel : gr. vii ;

and ordered him to drink some weak chamomile, or other tea, to encourage the operation. At 5 o'clock, in the afternoon, I saw him again; he said the emetic had puked him four times, and had operated twice by stool; and that he had thrown up a great deal of bilious-like matter, from his stomach, since which he has felt better at his stomach, and the vertigo has come off: but that the pain of his arm is still very great. He had cold sweats on his hands and face as before, and his feet were also cold and sweaty. I examined his arm, but found neither swelling nor inflammation on any part of it.

He observed to me, that he could not drink of the tea in sufficient quantity to encourage the operation of the emetic; that when he attempted to drink, the effort seemed to take away his breath, and to choak him; so that he could swallow but a very small quantity. I requested his wife to hand to him a little tea. He took the cup in one hand, and when it was near to his mouth, his breathing was disturbed, and his features assumed a singular appearance. He, however, succeeded in getting the cup to his mouth, and immediately made a considerable effort, and swallowed a little of the drink. This convulsed his neck and throat, in a remarkable manner. I prevailed upon him to repeat the attempt with a spoonful of tea, which he swallowed; but with the same difficulty. He said, he could take no more; that it almost

strangled him, and occasioned great fatigue. In answer to my questions, whether his throat felt sore, and whether he could swallow his spittle, he said, that his throat was not, that he knew, the least sore ; and that he could swallow his spittle, with as much facility as ever.

I now began to suspect, that his disease was Hydrophobia, and, on inquiry, learned, that he had been bitten, about seven weeks before, by a dog, which was supposed to be *mad*. As he had no suspicion of his disorder being produced by the bite, I kept him ignorant as to the nature of his complaint, and even inspired him with the hope of soon recovering again.

At half past six o'clock, this afternoon, a blister was applied to his throat, and an ounce of strong mercurial ointment was rubbed on his arms, and thighs, and in the palms of his hands. He was also directed to take fifteen drops of the tincture of cantharides, every hour, in a spoonful of tea, or water.

September 19th. I saw him this morning, at six o'clock. His hands and feet were cold and sweaty, as they were yesterday. The tincture of cantharides had been given to him (regularly) every hour, from half after six last evening, until past three this morning ; fifteen drops, at each dose. He had had great difficulty in swallowing this medicine, and his spasms had increased so much, that he was unable to take any more of it. During the night, he had had two loose stools, and had passed urine several times, with-

out pain. The blister had risen tolerably well, and contained some yellow serum, which ran down his neck when the blister was opened. This running of the water of the blister occasioned the same kind of convulsions and suffocation, as those which were induced when drink was offered to him.—Half an ounce of strong mercurial ointment was rubbed upon his arms and thighs this morning. He complained of no other pain but that in his arm; says he has an appetite to eat, if he could only swallow. Upon being asked, whether he felt thirsty, he answered, no; and observes that to think of water, or to barely mention water to him, *is to give him a shock through the heart, and to make him sigh.* He swallowed a small piece of bread with a little apple-butter, which convulsed him much, and (he said) nearly choaked him. He would, therefore, take no more.

At half after one o'clock, this afternoon, a gill of a strong decoction of Tobacco, with three gills of warm water, and a little mclasses, was administered by way of clyster. This was retained two minutes, and then discharged with a small portion of feces, of a natural appearance. He now felt faintish, for about half an hour.

At seven o'clock, in the evening, a second injection was given as before. This he retained about three minutes, and then discharged it *without* any feces. He, also, made urine, which (he said) *burned* him, and gave him some pain. He felt very faintish and weak, as soon as he had discharged the clyster.

He also said that he felt so weak and giddy, that he could hardly speak a word. He laid himself upon his left side, and was quiet, for three quarters of an hour, when he had a violent paroxysm of spasms and convulsions.

Another half ounce of strong mercurial ointment was rubbed into his arms and thighs. I applied blisters to his legs and wrists, and strong sinapisms to the soles of his feet. At half past nine o'clock, this night, a third injection was given. This he discharged in three minutes, and also made urine, which (he said) burned and pained him, as he discharged it. He now complained of becoming weak and faintish, as he had been before : he lay still for near three quarters of an hour, then said he felt tolerably well, and was without pain any where ; that his stomach felt as if he could eat a piece of gammon, and drink a bottle of wine. When he was told that he should have what he asked for, he said, that he would first try a little jelly : of this he swallowed a tea-spoonful, but with some difficulty. He now said that he wished to drink a little water. Mentioning water, without having any spasms or convulsions excited as before, he swallowed a tea-spoonful of the water. It convulsed him some, but by no means so much as it had done before. In about fifteen minutes, he swallowed three tea-spoonfuls of water, and took a little currant jelly, but with some difficulty. He seemed to be better ; his hands and feet were warm, and in a general, and indeed profuse and warm, perspiration. At half past eleven o'clock a fourth injection was given.

He retained it three minutes; it induced sickness and faintness as before; and in about an hour, he had a severe paroxysm of spasms and great shortness in breathing. He now began to complain of a pain in his head; and his hands, feet, and face were again covered with a cold sweat.

Half after one o'clock this morning (the 20th), I proposed another injection, to which he objected. After one o'clock, he began to spit very frequently, in small quantity, a white frothy spittle, which, being apt to stick about his lips, increased his spasms; he made frequent efforts to hawk up something which (he said) stuck in his throat. There was no soreness of his gums or teeth. The dread of water was greater than it had been: he even fell into spasms when he attempted to wipe the spittle from his mouth. The cold air, from the window, seemed to hurt him. Complained of a burning pain in his stomach, and of anxiety about his heart. At four o'clock, this morning, I prevailed upon him to have another injection administered. He retained it about two minutes; made urine, and without any burning or pain; was somewhat faint; but in other respects as he was before. At six o'clock, A. M., I saw him again: his face, which, before this, had been uniformly rather pale, was now red: his eyes red: his hands and feet warm and bathed in sweat. Complained of much pain in his head, and of a burning pain at his stomach. Very thirsty, but unable to bear the sight of water. Unable to swallow his spittle since one o'clock: the spitting and hawking as

before. Upon proposing another injection, he objected ; said it was time for him to prepare for another world, and began to pray.

20th. This morning, about nine o'clock, his blisters were dressed. They contained but a small quantity of yellow water. He had been perfectly sensible from the commencement of his illness, until this afternoon, when he seemed to be, occasionally, a little deranged. His speech was much interrupted, but he made no attempt to injure any body. Had violent reachings to vomit, with convulsions. At times, he screamed out, in the paroxysms of spasms. Complained much of a burning at his stomach. About five o'clock, this afternoon, he vomited about a gill of dark-green bile, which, he said, was very bitter. At half after eight o'clock, I saw him again ; and was informed, that, since my last visit, he had frequently vomited of a similar fluid, but of a blacker colour. His pulse was now very frequent and weak : his feet and legs were cold as high as to his knees ; the spasms and reachings to vomit continued severe ; and there was a cold, clammy sweat over his hands and face. He observed to me, that his end was fast approaching, and expressed a desire to have his wife and children, respecting whom he seemed to be much concerned, near to him.

After twelve o'clock, he became so weak as to be unable to lift his head over the bed, and vomited frequently, as he lay, a *black* fluid, of the consistence of blood. About half an hour before his death, he

turned on his right side, and expired, a little after two o'clock, on the morning of the 21st, without a struggle.

It deserves to be mentioned, that about two hours before he died, he ate, very eagerly, half of an apple, and a small piece of bread : but, while swallowing, was somewhat convulsed.

He was always greatly convulsed while discharging his clysters : but he passed his urine without any similar affection.

After his death, there were no livid spots on any part of his body ; but the parts to which the blisters had been applied, had turned of a blackish hue. His ears had turned black, and the nails of his hands and feet were blue.

October, 1802.

NOTE.

The foregoing case will not be deemed altogether uninteresting. The unfortunate subject of the relation had taken (very soon after the mortal bite was inflicted) a considerable quantity of the Anagallis, in the efficacy of which, both as a preventive and cure of hydrophobia, so much confidence has been reposed, not only in Pennsylvania and other parts

of the United-States, but also in several of the countries of Europe. He was afterwards treated by some of the most powerful means that have ever been employed for the cure of this dreadful disease. The injections of Tobacco were exhibited by my advice, as the well known effects of this active article in relaxing spasms, seemed to afford a distant prospect of its being of service. I was led, by another consideration, to recommend the tobacco. Injections of this plant have sometimes been used with advantage in the disease of tetanus, which bears, in several respects, a near relation to hydrophobia.

EDITOR.

XXIII. Valedictory Charge, delivered to the Graduates in Medicine, at the Commencement, held June 5th, 1805, in the University of Pennsylvania. By BENJAMIN RUSH, M. D., Professor of the Institutes and Practice of Medicine, &c.

IF the last sight of any thing, even of a tree, or a stream of water, be attended with distressing emotions; what must the feelings of a teacher be, when he takes a last and farewell look at a number of his pupils, endeared to him by diligence in their studies, by the most amiable deportment, and by numerous instances of personal respect, in his intercourse with them? Under the influence of these reflections, I feel, gentlemen, more than I am able to express; and, were I permitted to obey the impulses of my heart, I would only squeeze your hands, and,

by an affectionate silence, convey to you my wishes for your future welfare. But as the custom of our University calls for a parting Address, upon this public occasion, I shall endeavour to discharge this duty, by briefly suggesting to you a few directions, intended to promote your improvement and usefulness in your profession ; and, while my voice only sounds in your ears, imagine you hear your other Professors, and the Trustees of the institution, inculcating the same advice upon you.

Invested, as you have just now been, with the honours of this University, you have not yet finished your medical studies. You have only laid a foundation for them, on which to build, must be the business of your future lives. To enable you to do so, it will be necessary in the

1st place, To continue your application to books. If a physician acquire skill by his own solitary experience, how much more will he acquire, by availing himself of the experience of several hundred physicians ! But reading will be necessary, not only to increase your stock of ideas, but to retain those you have acquired ; for such is the nature of the human mind, that, unless it be continually excited by fresh accessions of knowledge, it will soon lose all that it has acquired in early life : hence it is no uncommon thing to find an old physician more ignorant than he was when he first began the practice of medicine. I need hardly repeat, what has been often inculcated upon you in the course of your studies, to make

allowances in reading books written and published in foreign countries, for the difference which climate, diet, and manners make, in the character of diseases, and even in the doses of the same medicines.

2dly. Let me recommend to you to record the history of the weather of every season; of the quality of those vegetable and animal substances which constitute the food of man; and, afterwards, to mark the diseases which accompany, or follow, them, with their changes and combinations, and the exact order of their succession to each other. You will thus acquire habits of attention and reflection, and be enabled to revive and apply, at your pleasure, all the knowledge you have accumulated in this way. For, however strange it may sound, I believe few physicians, who have neglected this practice, ever remember, correctly, the symptoms of the diseases they have attended, beyond the two or three last years of their lives.

3dly. You owe, gentlemen, a large debt of gratitude to your ancestors in medicine. This debt can be paid, only, by communicating the result of your experience and knowledge to your cotemporaries and posterity. Let no fact, therefore, however inconsiderable it may appear, that tends to lessen the mortality, or even the pain, of a single disease, sleep in your common-place-books, or perish in your memories. The ocean consists of drops; and minute parts, collected and arranged in a certain order, are indispensably necessary to constitute the comely pillars and stately dome of the great fabric of medicine. Recollect, further, that the

services you render to your patients, in curing their diseases, may be considered as articles of commerce, which are exchanged for the means of your subsistence; but the services you render, by publishing your discoveries, will be gratuitous offerings upon the altar of humanity. They will, moreover, be honourable to our profession, for they will draw a line between your characters, as physicians and benefactors to mankind, and the sordid and vulgar traders in the health and lives of their fellow-creatures.

You begin your professional career, gentlemen, under the most auspicious circumstances. A new æra has commenced in our science. Natural history and chemistry have lately shed an unusual portion of light upon the theory and practice of physic. Habits of observation, ardour, and correctness in experimenting, and intrepidity in reasoning, have likewise succeeded a superstitious attachment to forms and names, in our schools of medicine. The effects of these new aids, and modes, of acquiring medical knowledge, have lately appeared in the diminution of the mortality of many diseases.

Improve, perfect, and perpetuate, what has been so happily and successfully begun by the present generation. We commit their unfinished labours to your care; and, while we are descending into the vale of life, we shall be consoled in reflecting, that the science we have loved and taught, from its encreasing advantages, will be more useful in your hands than it has been in ours.

4th, and lastly. In your intercourse with your patients, I have only to suggest to you “to act towards them, as you would wish them, in like circumstances, to act towards you.” Under the direction of this heaven-born precept, you will be prompt and regular in your attendance upon them; you will treat them, at all times, with delicacy and respect; you will sympathize in their sufferings; you will forgive the changes in their tempers and conduct, which are sometimes induced by sickness; you will forbear to oppress the unfortunate; and you will be strictly just in your demands for remuneration for your services from the affluent. By these means, you will endear yourselves to your patients, and impart a dignity and splendour to your characters, which they never can possess from an exclusive display of talents and knowledge.

You have this day, gentlemen, ceased to be our pupils; but you have acquired a new, and more intimate, relation to us. You have become our younger brothers in the profession of medicine; and, as such, we invite you to command our fraternal services.

In behalf of my colleagues, and of the fathers of the institution, I bid you adieu.

THE
PHILADELPHIA
MEDICAL AND PHYSICAL JOURNAL.

SECTION SECOND.

VOL. II. PART I. S



BIOGRAPHY.

I. *Memorandums of the Life and Writings of Mr. JOHN CLAYTON, the celebrated Botanist of Virginia.*

“ DR. MADISON presents his respects to Dr. Barton, with the following particulars relative to Mr. Clayton, which Dr. Galt has been so kind as to collect.

“ Mr. John Clayton, the botanist, was born at Fulham, in the county of Kent, in Great-Britain. He came to Virginia, with his father, in the year 1705, and was, most probably, then in his twentieth year. His father was an eminent lawyer, and was appointed attorney-general of Virginia.

“ Young Clayton was put into the office of Mr. Peter Beverly, who was clerk, or prothonotary, for Gloster-county, in Virginia. He succeeded Mr. Beverly as clerk of that county, and filled the office fifty-one years. He died on the fifteenth of December, 1773, in his eighty-eighth year.

" During the year preceding his decease, such was the vigour of his constitution, even at this advanced period, that he made a botanical tour, through Orange-county. It is believed that he had visited most of the settled parts of Virginia*.

" He left behind him two volumes of manuscript, nearly copied and prepared for the press; and a *hortus siccus*, of folio size, with marginal notes, and directions for the engraver, in preparing plates for his proposed work. Mr. Jasper Clayton, grandson of the

* Mr. Jefferson has informed me, that Clayton never crossed the Blue-Ridge. This appears very probable. For had he crossed this great mountainous tract, he could not but have observed (ardent and active as he was, in the pursuit of his favourite study) many of the fine vegetables which are common in this part of Virginia, but which are unknown to the east of the Ridge. After all, however, it is difficult to conceive, that the vigorous botanist should have consented to leave altogether unexplored, the vegetable treasures of the western parts of Virginia, especially towards the latter period of his life, when, by reason of the removal of the Indian tribes, it was much more safe to visit, and travel through, those parts. Several years before the death of Clayton, Mr. John Bartram (of whom we have given some account in the first part of this *Journal*) repeatedly visited the western, or transmontane, parts of Virginia, and was the first botanist to discover a considerable number of plants, of which no mention is made in the *Flora Virginica*. But Clayton, there can be little doubt, had, at least, travelled as far as the *eastern foot* of the Blue-Ridge: for, not to mention other circumstances, he tells us, that he saw a species of Rubus, or Bramble, in the county of Princess-Anne, on the banks of the river†, where it passes through the "Blue-Mountains." EDITOR.

† James-River.

† *Flora Virginica*, &c. p. 78.

botanist, says, that this work, which was in the possession of his father, when the revolutionary war commenced, was sent to a Mr. William Clayton, clerk of New-Kent, as to a place of safety against the invading enemy. It was lodged in the office, with the records of the county. An incendiary put a torch to the building, and thus perished, not only the records of the county, but the labours of Clayton.

" Several of the botanist's original letters still remain, and other papers, which may be valuable. It is proposed to give them all a careful examination.

" The character of Clayton stands very high, as a man of integrity, and as a good citizen.

" Considerable remains of his garden are to be seen: most of the shrubs and plants are in a flourishing state, as I am informed by Dr. Galt, who was lately at the place. He took particular notice of the Purple-Fringe-tree*, which must be very rare. At least, I have never seen it."

" When any one (says the very respectable Governor Page, of Virginia) described to Mr. Clayton, what he thought a newly-discovered tree, shrub, plant, or flower, he would, in a modest manner, say, " did you not find it in such a county, and in such and such a

* *Chionanthus Virginicus*. The purple or rose-coloured variety of this fine shrub is occasionally to be met with in Pennsylvania.

place?" On being answered that it was found in that very spot, he would add, that it was called by the Indians (I have been told) so and so; by them used for such and such purposes, and may be found described in such a class of Linnæus. And sometimes I have heard him say, it was described by Theophrastus, and called, by him, by such a name, in Greek. And such was his desire to obtain a complete knowledge of the plants of Virginia, that, notwithstanding his great parsimony, he would offer a reward for any discovery of a plant unknown to him. There seemed to be no part of the learning of his day (I mean about the year 1773) unknown to him; and he had a high relish for witty conversation, and classical allusions, which his son the doctor, and Mr. Fontaine, the minister of his parish, often highly gratified.

Mr. Clayton "was a strict, though not ostentatious, observer of the practice of the church of England; and seemed constantly piously disposed. I have heard him say, whilst examining a flower, that he could not look into one, without seeing the display of infinite power and contrivance; and that he thought it impossible for a BOTANIST to be an ATHEIST*."

Mr. Jefferson has spoken of Clayton as a native of Virginia. "This accurate observer (says the President) was a native and resident of this state, passed

* Letter (dated Richmond, January 18th, 1805) to the Editor, from his excellency John Page, Esq., governor of Virginia.

a long life in exploring and describing its plants, and is supposed to have enlarged the botanical catalogue as much as almost any man who has lived*." It appears, however, from the information of Bishop Madison, and also from that of Mr. Page, that to England belongs the honour of having produced this distinguished botanist, and learned man.

Mr. Clayton is chiefly known to the learned, especially in Europe, by the *Flora Virginica*. The first edition of this work appeared at Leyden, in the year 1748, in octavo : a more complete edition was published, at the same place, in quarto, in 1762†. This truly valuable work is very frequently referred to by Linnæus, and by all the succeeding botanists who have had occasion to treat of the plants of North-America. It is to be regretted, however, that they so frequently refer to the *Flora* as the work of Gronovius, though its great value is derived from the masterly descriptions communicated to the Leyden professor by Mr. Clayton.

As a practical botanist, Clayton was, perhaps, inferior to no botanist of his time. His descriptions of plants are, in general, so correct, that it is scarcely

* Notes on the State of Virginia, &c. p. 68. The original edition, of 1782.

† *Flora Virginica exhibens Plantas, quas nobilissimus vir D. D. Johannes Claytonus, Med. Doct. &c., &c., in Virginia crescentes observavit, collegit et obtulit D. Joh. Fred. Gronovio, cuius studio et opera descriptae et in ordinem sexualem systematicum redactae sistuntur.* Lugduni Batavorum : 1762.

possible to remain in doubt concerning the precise species which he describes. This is especially the case in the latter numbers which he transmitted to Gronovius: for he had now become better acquainted with the system of Linnæus, besides enjoying that increasing facility in accurate description, of which none but the *progressive* naturalist can form a correct idea. So long as the science of botany shall be cultivated (in America at least), the services of Clayton will be gratefully remembered; and I shall consider it as a duty incumbent upon myself to preserve, in every case, his original descriptions in my intended account of the plants of the rich and extensive country of Virginia*, in exploring which I have ever experienced sensations of a pleasurable kind, when I reflected, that I was treading the ground over which Clayton had so often passed before me.

Mr. Clayton was a member of some of the most learned literary societies of Europe, and corresponded with Gronovius, Linnæus, and others of the ablest botanists of that portion of the world. But he was not brought up to the profession of physic, much less had he received the degree of Doctor of Medicine, as we are led to suppose from the title-page, and from the dedication†, of the last edition of the *Flora Virginica*. This edition, it will be recollectcd, was not published

* *Prodromus of a Flora of the States of New-York, New-Jersey, PENNSYLVANIA, Delaware, Maryland, and Virginia.*

† *Nobilissimo et consultissimo viro D. D. Johanni Claytono, M. D. et Botanico eximio, &c., &c., S. P. D. Laur. Theod. Gronovius.*

by the Gronovius to whom Clayton sent the specimens of Virginia plants, but by the professor's son, Laur. Theod. Gronovius.

It is my intention to give a more ample and finished account of the life and writings of Clayton, in another work, exclusively consecrated to the memory of a number of illustrious men, BOTANISTS, NATURALISTS, PHYSICIANS, and PHILOSOPHERS, who were either born, or who have flourished, in North-America. In the mean while, I thus publicly return my thanks to the two gentlemen who have had the goodness to collect for me those important documents, to which I have referred, in the preceding imperfect sketches of the life of one of the FATHERS OF BOTANICAL SCIENCE, IN AMERICA.

EDITOR.

II. *Some Account of the late Professor VAHL, of Copenhagen. By the EDITOR.*

“ PROFESSOR VAHL died, at Copenhagen, on the 24th of December, last, at the age of about fifty-two. His worth and his merits have now, for the first time, come into full and open view. While living, he was too modest to assume the elevated station to which his genius and his learning entitled him. All the journals pronounce his praise; and the first literary characters unanimously agree, not only that he was the greatest naturalist that Denmark ever possessed, but also the ablest botanist of his age.—The king has

purchased his *Herbarium*, as well as his library and his manuscripts; and, besides a handsome premium, has granted an annual pension, for life, to each of the Professor's six children. All this his Majesty, by a very gracious letter (as a testimony of his sense of the distinguished merits of the deceased), has notified to the widow, to whom, also, he has granted a generous pension during her life-time*.”

“ We have sustained (says the illustrious entomologist, Fabricius) a great loss in Denmark, by the death of Professor Vahl. He was, certainly, the first botanist in Europe, and had just begun to publish his *Enumeratio Plantarum*. The first volume appeared before his death: the second volume is printing, but, I suppose, will not proceed further than TRIANDRIA. For the remainder of the work, he had collected a great many materials: but the last polish is wanted. It is difficult to find a man who is able to enter into the ideas of this author†.”

Professor Vahl was a native of the city of Bergen, in Norway, where his father was one of the most opulent and respectable merchants. He received a part (the most useful part) of his education under the direction of Linnæus. He was one of the favourite pupils of this great man, whose happy and impressive genius gave a new face to the whole science of NATURAL HISTORY.

* MS. note, communicated to the Editor by Mr. P. Pedersen, Charge des affaires from his Danish majesty to the United-States.

† Letter to the Editor, dated Kiel, 1805.

TORY. Perhaps, indeed, no other man was so completely a master of the principles of the Swedish naturalist as his pupil Vahl. Like Linnæus, he seems to have possessed that rapid perception, which catches, at a glance, the most discriminative characters of natural objects; that critical attention to the forms and structure of the parts of plants; that severe patience in research, without which no one is capable of becoming a botanist or naturalist of the first order:

—“*Velut inter ignes Luna minores.*”

The labours of Vahl were great, though his published works are not numerous. Upon the death of Otto F. Muller, he was entrusted with the continuation of the *Flora Danica*. The ability which he manifested in the conduct of this great national work is acknowledged by every botanist, and it will, perhaps, be difficult to find a successor equally qualified for the important task of continuing or finishing the work*.

Vahl's *Symbolae Botanicae*, the first part of which appeared at Copenhagen in 1790, is a work of classical

* Speaking of this work, and of Regensfuss's History of Shells, both of them superb works, and both supported by royal munificence, Dr. I. E. Smith says, “The Flora Danica, while under the direction of Oeder, was equally well executed; but Professor Muller, more of a zoologist than a botanist, continued it with less care and perfection. Its reputation will, I doubt not, soon be abundantly restored by the abilities of Professor Vahl, to whose care it is now entrusted. *Discourse on the Rise and Progress of Natural History*, read at the opening of the Linnean Society, April 8, 1788.

merit. But the work to which he most sedulously directed the powers of his genius and his labour, was the *Enumeratio Plantarum*, as he modestly called it. Professor Fabricius's information respecting the unfinished state of this work will be read with pain by every botanist: for an extensive work on the *Species Plantarum*, from the hand of such a master, is a treasure which we still, and probably must for a long time, desiderate.

It is a circumstance not a little remarkable, that three of the greatest botanists whom the world has yet produced, were natives of the chilly regions of the north of Europe, beyond the latitude of 60: Linnæus, who was born in the province of Smoland (in Sweden), Solander, who was a native of Pitea (in Westerbotn), near the Arctic circle, and Vahl, a Norwegian! How little does this fact favour the opinion of the Abbé du Bos, and other writers, who have laboured to prove, that climate exerts a most decided and immediate influence upon the human intellect? And how much does it favour the opinion of the philosophical Gray, who attributes so little to what has been happily denominated the “skyey influence*?”

* Shakespeare's Measure for Measure.

III. Tribute to the Memory of Linnæus.

NO literary character, in modern times, has been more universally respected, and even venerated, than the celebrated Linnæus. His name is familiarly known in every civilized portion of the world; and although many of his theoretical opinions are now generally neglected; although not a few of the learned have seceded from his methodical arrangements of animals and of minerals; and although even his **SEXUAL SYSTEM**, or arrangement of vegetables, is found to be, in many respects, imperfect, and liable to objections, which seem to show, that it also must, in time, give way to an arrangement less artificial, if not more facile; yet the name and services of this extraordinary man will live in the remembrance of future ages: nay, will, in all probability, survive the *destruction* of many of the *species* which he has so ably described.

Linnæus died, at Upsal, in the month of January, 1778, aged seventy years and eight months. The King of Sweden ordered a medal to be struck to his memory. On the face is represented the bust, with the name, of the great naturalist: on the reverse, Cybele afflicted, holding in her hand a key, surrounded by animals and plants, with this motto:

Deam luctus angit amissi;

and in the field,

*Post obitum Upsaliæ die 10 Junii 1778,
Rege jubente.*

In the year 1798, a MONUMENT was erected to the memory of this great man, by his grateful pupils. In a future number of this *Journal*, we hope to exhibit an accurate engraving of it. Meanwhile, the following notice, communicated by a very ingenious and much-regretted pupil, will not be unacceptable.

MONUMENT

OF

LINNÆUS.

" In the cathedral of Upsala, there is a new monument erected to the memory of LINNÆUS. It is, in every respect, worthy of the man; simple, majestic, durable. It consists, first, of three stone-steps: on these is erected, against the wall, a finely-polished porphyry, about ten feet high. The monument at the top is in bronze, a full size medallion of Linnæus, finely executed by the celebrated Sergel, over which is a bronze oaken crown. Under the bust, is this inscription in bronze letters, gilt:

CAROLO LINNE
BOTANICORUM
PRINCIP. I.
AMICI ET DISCIPULI
1798.

“ The letters alone cost 400 dollars.

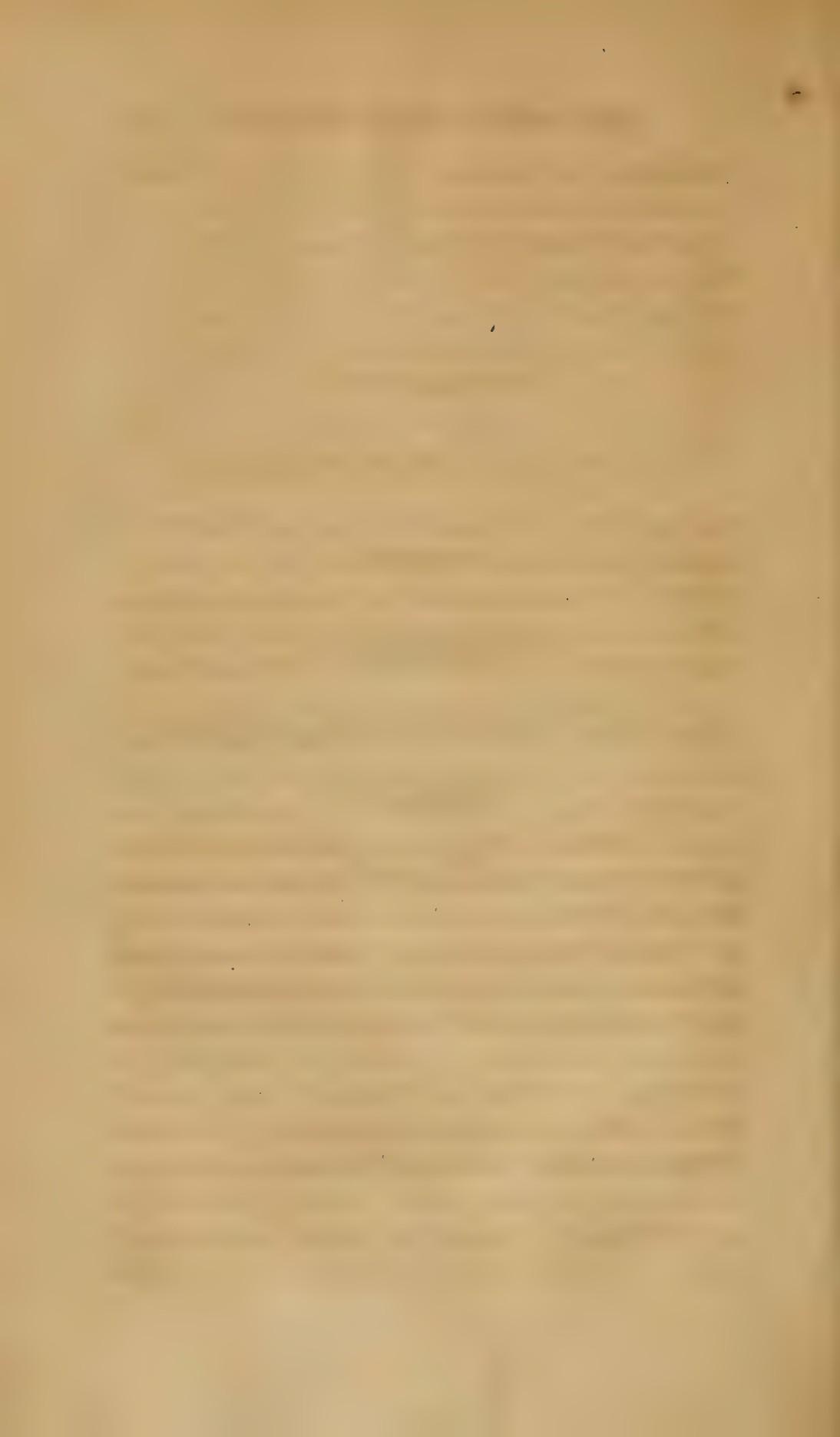
“ The monuments of the kings and nobles, with which this cathedral abounds, are splendid: but the eye soon wearies in reading their titles and eulogiums, and returns to rest on *this more interesting object**. ”

* Extract of a letter (dated Paris, December 24th, 1800) from the late Mr. Thomas P. Smith, to the Editor.

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SECTION THIRD.

VOL. II. PART I. U



MISCELLANEOUS
FACTS AND OBSERVATIONS.

NATURAL HISTORY.

ZOOLOGY.

Mammaliology.

1. MR. CUVIER (of Paris), to whom we are indebted for so much important information relative to the discovery and history of the vestiges, or impressions, of various species of quadrupeds, and other mammalia, of which the living representatives are no longer seen, has lately discovered, in the gypseous quarries in the vicinity of Paris, the vestiges of a species of *Didelphis*, or *Opossum*, unlike any of those that are now known to naturalists. This discovery is the more important, inasmuch as Europe does not, *at this time*, possess a *native* species of the genus *Didelphis*, nor of any of the other genera more immediately related to it. Nor have we any good

reason to believe, that any species of these *Bursaceous* genera *has existed* in Europe, within the memory of any of the present races of its human inhabitants. The period, then, of the existence of the Parisian *Didelphis* must, in all probability, be referred to a very remote era in the history of the earth.

EDITOR.

2. The Editor of this *Journal* has made very considerable progress in his anatomical and physiological inquiries concerning the Common Opossum of North-America, to which he has given the name of *Didelphis Woapink**; *Woapink* being one of its Indian appellations. He designs to publish his inquiries in two distinct memoirs, which will be embellished, and rendered more useful, by a number of fine engravings, representing the progressive evolution of the parts of the embryon and fetal opossums; besides engravings of the male and female organs of generation, &c. An abstract of the second memoir, which is restricted to the *marsupial* and *dorsal* gestation of this singular animal, has been transmitted to Mr. Roume, of Paris, by whom, it is probable, it will be published.

In the course of his inquiries, many important circumstances respecting the natural history of the opos-

* The Virginian Opossum of Pennant: *Didelphis Virginicus* of Shaw.

sum have been brought to light. Among others, the final intention of nature in the formation of the *marsupium*, or pouch, seems, in the Editor's opinion, to be satisfactorily ascertained.

3. Elephantine bones, of two distinct species, continue to be found in various parts of North-America. A large grinder of the species improperly called Mammoth, or Mammouth*, has lately been found, in a field, at the distance of a few miles from Chambersburgh, in Pennsylvania, and is in the Editor's possession. A tooth of the same species has been discovered near the mouth of Buffaloe-creek, in the state of New-York, nearly in latitude 43. Of the other species, which appears to be nearly allied to (if, indeed, it be not the same with) the mammoth of Asia†, specimens have been discovered in Kentucky, in South-Carolina, &c. This species (or rather its *defense*, or tusk) has given its name, among some of the Indian tribes, to a considerable branch of the river Susquehanna. The Indians imagine, that this defense is the *horn* of some large animal: some of them say, the horn of a Snake.

EDITOR.

* *The Elephas Americanus* of Cuvier.

† *Elephas primigenius* of Blumenbach: *Elephas Mammontevs* of Cuvier.

4. The very respectable and ingenious Dr. Samuel Brown, of Lexington, in Kentucky, informs the Editor, that there has recently been discovered, in one of the nitrous caves which are so common in that part of the United-States, the cranium of a large species of *Sus*, or Hog, in a state of excellent preservation. By the zoologist, this cannot but be deemed a fact of considerable consequence. For, with the exception of the Mexican Hog, or Pecary (the *Sus Tajacu* of Linnæus), no species of the genus has been discovered *native* within the limits of North-America.—The Pecary itself is said to be a pretty common animal in the *trans-Mississippi* part of the United-States.

5. The Editor is also informed, from another source, that some *cranial* bones, supposed to be those of a species of Rhinoceros, have been discovered in Kentucky, in one of those *muriatic* licks, or marshes, which have so often furnished us with Elephantine bones. Although this information requires further confirmation, we may venture to predict, that vestiges of at least one species of the genus Rhinoceros will, at some future period, be discovered within the limits of North-America. This conjecture is founded upon the well-established fact, that North-America has, *in former times*, possessed several of those large species of mammalia, of which the vestiges only now exist in Asia: and upon this fact, that

many other species still exist in both of these portions of the earth.

EDITOR.

6. Among the animals which have lately been observed in the Missouri-country, by Mr. Lewis, are the following, viz.:

- a. A species of Hare, apparently the *Lepus variabilis*, or Varying Hare, which is common in Hudson's-Bay, New-York, Pennsylvania, Virginia, &c. :
- b. A species of *Arctomys*, or Marmot, perhaps the Earless Marmot of Pennant; or *Arctomys Citillus* of Pallas. This species inhabits Bohemia, Hungary, and other parts of Europe; also India, Persia, Siberia, Kamtschatka, and some of the isles between the continents of Asia and America. It was formerly known to be a native of the continent of North-America, but is never seen in the Atlantic states of the American Union, nor, so far as we know, in any part of the tract of country east of the Mississippi, south of latitude 48, or 50 :
- c. *Mustela Erminea*, or Stoat. This is a very common quadruped in the north of Europe and of Asia, in Kamtschatka, the Kurile-islands, &c. In North-America, it is met with in Canada, Newfoundland, New-York, Pennsylvania, &c. Of

course, the range of this animal over the globe is very extensive:

d. Some species of Sciurus, or Squirrel.

Specimens, or skins, of all these animals have been transmitted to, and are preserved in, the PEALEAN MUSEUM, in Philadelphia.

EDITOR.

7. In New-Mexico, there is found a beautiful animal, which, perhaps, may be the true Leopard. Its skin is a fine yellowish-white colour, spotted elegantly with brown and blackish spots. General Wilkinson carried one of the skins of this animal with him, from this country. They are said to possess enormous strength: relations are given of their carrying away the carcases of horses and bullocks. If this be true, they must be larger and more powerful than the Panther*, which seldom attempts to carry away any thing above the size of a hog, or large calf.

WILLIAM DUNBAR, Esq.
Letter to the Editor, dated Natchez,
March 1st, 1801.

* *Felis concolor* of Schreber, best known, in many parts of the United-States, by the name of Painter.

Ornithology.

8. The Corvus Pica, or Magpie, has lately been discovered in the country that is washed by the Missouri, at a considerable distance from the mouth of this river, and a specimen of it has been transmitted to the Museum of Mr. Peale. This bird, which is altogether unknown in the Atlantic States of the American Union, is also a native of Hudson's-Bay, where it is called, by the Natives, *Oue ta-kee Aske*, or the *Heart-Bird*. It is not improbable, that it migrates to the Missouri-country from Siberia or Kamtschatka, in both which countries it is a very common bird. At Hudson's-Bay, it is not common.

EDITOR.

9. "The Canvas-Back has been killed at Columbia (on Susquehanna), and has been seen by Mr. R., of Delaware, Mr. L., by a clergyman from the Eastern Shore of Maryland, and others, who all pronounce it to be, unquestionably, the *real* Canvas-Back.— These birds have been killed at, and above, Columbia before, but were never known to frequent the River so high up, *in large numbers*, until last winter.

"The clergyman, alluded to, told me, he supposed, that the *freshes* in the creeks and inlets, last year, must have destroyed the root upon which they feed, in their usual feeding places, and induced them to go higher up the river, in pursuit of it: and hav-

ing found it there, it is not improbable, that they will visit us every winter.

Editor of the American Naturalist.

"I have not been able to ascertain, that they eat any thing besides this root. Their superior flavour is attributed to their living wholly on it, and the circumstance of their leaving their usual feeding places, and coming so far in search of it, seems to strengthen this opinion."

MATTHIAS BARTON, Esq.

*Letter, dated Lancaster, August 29th,
1805.*

The Canvas-Back here spoken of, and so much admired, as an article of food, in the United-States, is the *Anas ferina* of Linnæus; the *Anas Penelope* of Brisson. It is, also, a native of Britain, where it is known by the names of Pochard, or Dun-bird, Great Red-headed Wigeon, &c., &c. The plant whose root is said to be the favourite food of this species of duck, is a species of the singular genus of *Vallisneria*, which I have called *Vallisneria americana*, and concerning which I have read a memoir to the American Philosophical Society. Perhaps, it is the *Vallisneria americana* of Michaux. *Flora Boreali-Americanana, &c.* tom. 2. p. 220.

EDITOR.

10. A memoir has been read before the American Philosophical Society, in which the author has shown,

that at least two distinct species of Meleagris, or Turkey, are known within the limits of North-America. These are the Meleagris Gallopavo, or Common domesticated Turkey, which was altogether unknown in the countries of the old world before the discovery of America; and the common wild Turkey of the United-States, to which the author of the memoir has given the name of Meleagris *Palawa*: this being one of its Indian names.

The same author has rendered it very probable, that this latter species was *domesticated* by *some* of the Indian tribes, living within the *present* limits of the United-States, before these tribes had been visited by the Europeans. It is certain, however, that the turkey was not domesticated by the *generality* of the tribes, within the limits just mentioned, until *after* the Europeans had taken possession of the countries of North-America.

EDITOR.

11. It is not generally known to the naturalists, that the Turkey (Meleagris Palawa), in its wild state, lives upon shell-fish, different species of serpents, and other animal matters, as well as upon vegetables. Much less is it known, that the common domesticated turkey may be supported, for a very considerable length of time, *almost entirely* upon pounded brick and water, WITHOUT THEIR SUFFERING ANY PERCEPTEBLE DIMINUTION IN THEIR BULK, STRENGTH, OR HEALTH. This, however, is a fact, which has been determined by many

experiments, made upon *many* of these birds, in Philadelphia, and in other parts of the United-States. A full account of these experiments will be presented to our readers, in a future number of the *Medical and Physical Journal*.

EDITOR.

Ophiology.

12. I have seen two new species of the Rattle-Snake, of a tremendous size: one 6 feet long, $11\frac{9}{10}$ inches in circumference, with a row of white lined rhombi along the back. I have ventured to name this *Crotalus rhombiferus*. Its skin is black—151 scuta on the belly, 25 on the tail. The other has a yellowish skin, with dark zig-zag belts—170 scuta on the belly, 25 caudal. I was puzzled for a name, but called it *Crotalus zetazonæ*, until Dr. B***** names it. The length is 6 feet 2 inches: ambit $5\frac{1}{2}$ inches, I think.

We have two dwarf kinds of *Crotalus*, whose bite, as that of the others, is mortal. I think them non-descripts. One is yellow, with dark narrow zoni, and has a dark fillet round the head, above the eyes. The other is blackish, with rhomboid, dark lined transverse figures on the back.

JOHN BRICKELL, M. D.,
of Savannah.
Letter to Mr. J. Lyon.

13. " Almost all amphibious animals (says Professor Fabricius), the tortoise excepted, live by preying upon other animals. But being destitute of strength and swiftness, Nature has given, at least to some of them (according to the testimony of many and creditable writers), the peculiar faculty of forcing other animals to throw themselves into their open jaws. Kalm, the Swede, and the American Smith Barton, assert of the American serpents, that if they fix their fiery, glaring eyes upon any animal, such as a squirrel, or a bird, within a certain distance, they entirely lose the power of escaping, but throw themselves, slowly, irresistably, into the extended jaws of the snake. And if any thing disturbs the snake, so that it withdraws its eyes but for one moment, they escape with the utmost precipitation.

" We observe (continues this learned naturalist) something similar to this in our common, tardy, thick, and fat toads, which frequently sit under little stones and bushes, having their mouths wide open, into which flies, bees, and other insects, are drawn in the same manner. All the theories that have hitherto been offered to explain these appearances appear to me both unnatural and improbable. Indeed, I cannot but doubt the reality of the fact itself, until we shall receive further observations and discoveries relative to it."

JOH. CHRIST. FABRICII, &c.
Resultate Natur-Historischer Vorlesungen,
p. 267, 268. Kiel: 1804.

It will be evident to any one, who has perused, with attention, my two publications* on the supposed fascinating faculty of the Rattle-Snake, and other American serpents, that Mr. Fabricius has by no means fully comprehended my peculiar theory. I have not adopted the hypothesis of the very respectable Kalm, with whose name mine is mentioned, by the Danish Professor. On the contrary, I have endeavoured to show, and I flatter myself that I have very satisfactorily shown, that there is no solid foundation for the vulgar, and very generally-received opinion, that serpents are endued with the faculty of fascinating, or charming, other animals.

Editor.

14. The following very curious tradition of some of our Indians, relative to serpents, is worthy of publication in this place. A part of the tradition has already been published in my *Supplement to a Memoir concerning the Fascinating Faculty which has been ascribed to the Rattle-Snake, and other American Serpents.*

' Having questioned Indians, a number of times, with respect to snakes having the power of charming,

* A Memoir concerning the Fascinating Faculty which has been ascribed to the Rattle-Snake, and other American Serpents. Philadelphia: 1796.—Supplement to a Memoir, &c. Philadelphia: 1800.

and always being answered in the negative, I was at length desired (says my friend, Mr. John Heckewelder) to give the reason the white people had for believing such a thing, which not being satisfactory, Pemaholend* declared: "The rattle-snake obtains its food merely by slyness, and a persevering patience. It knoweth as well where to watch for its prey as a cat does, and succeeds as well. It has, and retains, its hunting grounds. In spring, when the warm weather sets in, and the woods seem alive with the smaller animals, it leaves its den. It will cross a river, and go a mile and further from its den, to the place it intends to spend the summer; and in fall, when all the young animals bred this season are become strong and active, so that they are no more so easily overtaken or caught, it directs its course back again, to its den, the same as a hunter does to his camp."

"The white-people, continued Pemaholend, probably have taken the idea of this snake having the power of charming from a tradition of ours (the Indians), which our forefathers have handed down to us, from many hundred years back, and long before ever the white-people came into this country. Then (they tell us) there *was* such a snake, and a rattle-snake too, but then there was only *this one* snake which had this power, and he was afterwards destroyed; and since that time it hath never been said, that any other of the kind had made its appearance."

* An aged and much respected Delaware-Indian.

‘ At my request, Pemaholend related the tradition, and in the following words. “ Our forefathers have told us, that at a small lake, or large pond, not a great distance from where, as is believed, now the great city *Quequenáku* (Philadelphia) is built, there dwelt a Rattle-Snake, whose length and thickness exceeded that of the thickest and longest tree in the woods. This snake was very destructive, not only in destroying so much game, but in devouring so many Indians: for when he was hungry, he only looked round, and whatever he saw, whether Indian, deer, turkey, or even geese flying, he only held his head that way, opening his mouth wide, and drawing breath in the manner we do, and nothing could prevent such living creature entering his jaws. It is even said, that a whole flock of geese, flying at a great distance, have been drawn into his mouth, at one time*; and it was well known among the Indians, that of all the hunters or travellers, who passed that way, very few escaped him.

“ The Indians well knew when he was hungry, for then he grew angry, and blew with his mouth, which sounded like thunder: for his breath was so powerful, that all the trees, however large, would bend,

* It is curious, at least, to compare this part of the Indian tradition with what Metrodorus, as cited by Pliny, relates of certain Asiatic serpents. These, he says, by means of their breath, attracted birds, however high they were, or however quick their flight. “ Metrodorus, circa Rhyniacum amne in Ponto, ut supervolantes quamvis alte perniciterque, alites haustu raptas absorbeant.” Plin. Hist. Nat. lib. viii. cap. 14.

and even sometimes break down before him. There being no prospect of ever killing him with arrows, on account of the barrenness of the land, far round the lake, into which he would always retire, after satisfying his hunger, a great council of the nation was called together, and the question put, *Where are the Mannitoes of the Nation? Are they no more? Shall the whole of the nation be destroyed by a Mannito-Snake?* At length, two young men, endowed with *Mannittowie Powers*, offered their services, and declared, that unless the Mannittoi power of the snake exceeded theirs, they should succeed; but they would, at all events, make an attempt. They then bid farewell to the assembly, and their friends, dived into the river, from whence they proceeded under the water to a place opposite the Mennúppeek (Lake, or large Pond), where this snake dwelt. They made an opening under ground, from the river to the centre of the pond, by which the pond was drained, and became perfectly dry. After returning again, the same way they had come, they found the snake in great uneasiness, and on dry ground. Taking then the advantage of the dry weather, and the grass far around the snake being dry, they set fire to the grass, at a distance, and around the snake, by which means he was burnt to death*. Thus (continued Pemaholend) was this monster killed by two mannitto men of the nation: for, you must know, in

* Even this part of the Indian tradition seems to be borrowed from the old world. See a curious relation of the capture of an enormous serpent in *The Life of Seihos, as taken from private memoirs of the Egyptians.* Vol. i. p. 125—147. London: 1737.

those days, we had such men among us, who could live as well in the water as on land."

' Conversing one day with a Monsy (advanced in years) on ancient times, on the migration of the Indians, &c., he, in order to convince me (says Mr. Heckewelder) what the Indians once were, mentioned the killing of the Big Snake, the history of which, according to his relation, differing only in the following points :

" *a.* He did not think it had been a rattle-snake, but understood the old men, from whom he had heard it so often related (when he was young), that it was a snake of a peculiar kind, and had feet; and that never since had a snake of this kind appeared :

" *b.* That he was not sure as to the place where this snake kept; believed it had been higher up the country, and kept in a wide and deep place of the river, and in the country of the Munsees (or Min-sy), and was killed by a Mannitto Munsee :

" *c.* That after the nation had met in council, and the above questions put, a Munsee man of no character, nor seemingly of any consequence to the nation, said and declared, that he had *Mannittoie Powers*; could and would destroy the monster, prescribing the ceremonies the assembly were to observe during the expedition. That he then made a very strong arrow, or spear, sharp at both ends; and being equipped, took leave of the assembly—plunged

into the river, and dived under water, until he arrived within a small distance of the place where the snake lay, or floated, basking in the sun. Here he ascended to the surface, and calling out to the snake to receive him, he opened his mouth wide, and drew him in, when, however, in an instant, the snake was stabbed by him through both his sides, with the spear, which wounded him so deadly, that he gave a whirl, and being under great pain, discharged his excrements, and with the same this hero, who then swam again to shore, announcing his victory, and congratulating the assembly on the deliverance of the nation.

“ Thus (continued the old Munsee) were the Indians of those days *Mannitoes*. Nothing could resist them. They knew nothing of drowning. Our first Parents have sprung from the bottom of a lake.”

Botany.

Vegetable Physiology.

15. The flowing of Maple juice is a striking phenomenon to an attentive mind, as it is as completely *locked up* by continued warmth as by frost, and only flows by the *alternate* operation of these agents. Yet the same degrees of heat, even after frost, have not always the same effect. Thus a warm south wind stops the flowing more than a cool north-west wind. To judge from sensations, generally a bracing wind

facilitates the discharge, and a relaxing wind acts to the contrary. Whether, or how far, Electricity may operate in this case, I must leave for philosophers to determine.

The juice flows for about twenty-four hours after a frost, but when a tapped tree has ceased, tap a new tree, and it will flow considerably, as if a certain quantity was discharged by the frost. The juice flows from all sides of the incision.

Cut a sugar-maple early in the morning, if the night has been cold, and it will appear comparatively dry and devoid of juice, in every part of the tree. Cut it a few hours after, if the day is moderately warm, and the juice will issue almost in streams.

MR. DAVID THOMAS.

*Letter to the Editor, dated Elk-Hill
(Pennsylvania), April 14th, 1804.*

16. The flowering of the Cotton presented a fact so singular, on my attending to it, that I shall notice it in this place, although I am pretty certain it is already known to you. The flowers, when first blown, are of a beautiful white colour, and in a few hours afterwards become red; and this is invariably the case. They change their colour gradually, and when

I have attended to the change, it has appeared first on the *lower* side of the petal.

—
A. J. ROBERTSON, M. D.

*Letter to the Editor, dated Nashville
(Tennessee), September 5th, 1805.*

17. Dr. Darwin is of opinion, that the corolla forms a pulmonary system "totally independent of the green foliage," and that this respiratory system belongs to the sexual or amatorial parts of the fructification only! He asserts, that each petal is furnished with an artery, "which conveys the vegetable blood to its extremities, exposing it to the light and air under a delicate moist membrane, covering the internal surface of the petal, where it often changes its colour, as is beautifully seen in some parti-coloured Poppies, though it is probable (he observes) that some of the iridescent colours of flowers may be owing to the different degrees of tenuity of the exterior membrane of the petal, refracting the light like soap-bubbles.

"The vegetable blood (continues our learned author) is then collected at the corol-arteries, and returned by correspondent veins, exactly as in the green foliage, for the sustenance of the anthers, and stigmas, and for the important secretions of honey, wax, essential oil, and the prolific dust of the anthers, and thus constitutes a pulmonary organ."

In support of this opinion, Dr. Darwin has adduced several very ingenious arguments, for the full exposition of which I must refer to his *Phytologia**, a work replete with learning, and marked, in every page, with the genius of the BRITISH LUCRETIUS. It must be confessed, however, that much of mere hypothesis is attached to Darwin's observations, concerning the uses of the parts of vegetables. He has too frequently assumed as points completely established, points that are still involved in great uncertainty. Thus, a fundamental part of this author's reasoning concerning the use of the corolla is the assumption of the fact, that in this part of the fructification, there is a two-fold system of vessels, corresponding to the pulmonary artery and veins of animals. Now, many experiments, which I have made, compel me to entertain some doubts relative to the existence of an arterial and venal system in the corolla. What I have already said concerning the leaves†, may, with equal propriety, be extended to the corolla. I have often succeeded in colouring this part of the plant, with the juice of the Phytolacca, and other colouring matters: but I have not been able to convince myself, that the colouring matter is exclusively carried, in the first instance, along the upper surface of the corolla; and I never could decidedly perceive, that it was returned by a venous system, on the under side of the petals. I do not mean, however, to deny

* Sect. IV.

† Elements of Botany, &c. Part I. pages 57—59.

the existence of arteries and veins in the corolla. I wish to proceed with caution.

EDITOR'S *Elements of Botany, &c.* Part I.
pages 140, 141.

Genera and Species of Plants.

18. "M. de Beauvois has dedicated to the emperor Napoleon a tree of the country of Oware, in Africa, distinguished by its splendour, and the size and singularity of its flower."

MR. CUVIER.

19. "Botany continues to be enriched with an increasing number of new species. The superb work, the *Jardin de Malmaison*, by M. Ventenat; the *Flora of the Oware of Benin*, by M. de Beauvois; that of the *Isles de France et de Bourbon*, by M. du Petit Thouars; that of New-Holland by M. de Bellardiere, are prosecuted with success. Messrs. de Humboldt and Bonpland have published the first number of that of *South-America.*"

MR. CUVIER.

20. "M. Desfontaines has published a catalogue of all the vegetables in the *Jardin des Plantes*; a valuable work, not only for those who frequent that

celebrated school, but also for all botanists. M. Broussonet has also given that of the *Jardin de Montpellier.*"

MR. CUVIER.

21. Captain Merewether Lewis has transmitted to the American Philosophical Society (through the hands of the President of the United-States) a number of plants, which he has collected in different parts of the country that is watered by the river Missouri, and its branches. A catalogue of these plants (with some account of those which are new, or very rare) is preparing for the Society, by one of its members. These specimens, with others which we may hope to receive from Captain Lewis, will serve as a beginning of a *Flora Missourica.*

EDITOR.

22. We have here (at Savannah) a new species of herbaceous Polygala, with unpenniciliated red flowers in a simple terminal racemus, and narrow ovate lanceolate leaves. Its taste resembles that of Polygala Senega. I have seen a variety with white flowers, as I have of the Phlox caroliniana.

*Letter from Dr. JOHN BRICKELL
to the Editor.*

23. A species of Cakile grows on our sea-shore. In taste, its root resembles that of the radish, and probably is as good as many others of the *Tetradynamia* for scurvy. It grows erect: its leaves are cuneiform, rounded at the apex: their margin has a few dents and incisions.

DR. BRICKELL.
Letter to the Editor.

24. I have found in the woods of Washita, upon high strong ridges, what I suppose to be a new species of dwarf Cabbage, partaking of the taste of the radish. It is very agreeable, and may be eaten raw as a sallad. The cabbage appearance and taste of the leaf predominate: the root is perfectly white, with the distinct race of Horse-Radish, but greatly milder. It is now growing in my garden.

WILLIAM DUNBAR, Esq.
*Letter to Mr. John Vaughan, dated Natchez,
February 15th, 1805.*

25. Mr. Rafinesque, an Italian gentleman, has put into the hands of the Editor, a MS. catalogue of the plants of the State of Delaware, and of the District of Columbia. This catalogue, with large additions by the Editor, will be published in future parts of this *Journal*.

26. The Reverend Dr. Henry Muhlenberg, of Lancaster, in Pennsylvania, is preparing for publication a work, entitled, *Descriptio Uberior Plantarum Lancastriensium*. Dr. Muhlenberg is already well known to the public as an able botanist.

EDITOR.

27. The Editor of this *Journal* is preparing for publication his *Prodromus of a Flora of the States of New-York, New-Jersey, PENNSYLVANIA, Delaware, Maryland, and Virginia*. A short prospectus of this work will be given in a future part of the *Journal*.

EDITOR.

Mineralogy.

28. A large mine of Manganese has been discovered in the county of Shenandoah, in the great calcareous valley between the Blue-Ridge (or South-Mountain) and the North-Mountain. Mines of this useful mineral have been discovered in other parts of Virginia, &c., &c.

EDITOR.

29. In the month of July last, the Editor of this *Journal* discovered, in the neighbourhood of Reading,

in Pennsylvania, specimens of Zeolite. They were imbedded in regularly-chrystallized Basalt, of which there is a great abundance in the vicinity. Some of the Basaltic specimens are *octangular*.

Meteorology.

30. On the 23d of August last, between the hours of 3 and 4, P. M., in lat. $36^{\circ} 30'$, and long. $2^{\circ} 41' 15''$, west, we felt an unusual motion in the ship, accompanied with a rumbling noise. The frigate Constellation, about two miles a-stern of us, was also much agitated. The same evening, we spoke a Spanish vessel, and were informed, that they had also felt the shock, about the same time.

On the 25th, at 4, A. M., the wind blew hard, a heavy sea rose, accompanied with slight showers of rain. At half past 8, a dark cloud passed a-head of us: 35 minutes past eight, we felt another shock, which continued, without any intermission, for thirty seconds. The ship was much agitated, a rumbling noise was heard between decks, like that of a 24 pounder run fore and aft the decks. The first day, we were considerably alarmed, and supposed the ship had run over a shoal, but on sounding, no bottom was found.

Mount Etna now pours forth large columns of smoke: it is about forty miles from this place, but ap-

pears not more than five miles. It is covered with snow almost to its summit.

EDWARD CUTBUSH, M. D.

*Letter to the Editor, dated Syracuse,
January 10th, 1805.*

MEDICINE.

Materia Medica.

31. The bark of the *Platanus occidentalis*, or American Plane-tree, commonly called Sycamore, Button-wood, Water-Beech, &c., has lately been used, with some success, in the intermittents of Virginia, and some other parts of the United-States. A tolerable good treacle, or molasses, has been produced by tapping this tree, early in the spring, when the sap is rising; then boiling the sap.

EDITOR.

32. Several American species of Maple, besides *Acer saccharinum*, or the Sugar-Maple, are found to afford an excellent sugar, and in considerable quantity. I here mention two of these useful species: viz. *Acer rubrum*, and *A. glaucum*.

EDITOR.

33. The bark of the *Cornus florida*, or Common Dogwood, does more than support its former reputation. It was used, with much success, in the generally-prevailing intermittents of Maryland and Virginia, in 1804. By some respectable practitioners, it was deemed but little inferior to good Peruvian bark.

EDITOR.

34. The bark of the *Magnolia tripetala*, or Umbrella-tree, is much used, in some parts of the United-States, particularly in the State of Tennessee, as a tonic, in the management of the same forms of fevers. The Whites seem to have been taught the use of this article by the Indians, to whom we were, before, indebted for a *part*, at least, of our knowledge of the properties of several of our valuable indigenous vegetables.

EDITOR.

Practice.

35. I have seen the operation of trephining performed, a few days ago, on the person of a West-Indian negro, in St. Thomas's-Hospital. He received a blow, about four years ago, on the right parietal bone, with a hammer, which occasioned a depression. Some time after receiving the blow, he was attacked with an epileptic fit, attended with the sensation termed *aura epileptica* in the ring-finger of

the left hand, accompanied with a paralysis of that extremity. The fits, at first, were not very frequent; their frequency increased gradually, but with what intervals I could not learn. He was brought into the Hospital by his master, who commanded a trading vessel. The trephine was applied immediately on the depressed part, and when the bone was taken out, a perpendicular *spiculum* was found growing from its centre, about half an inch in length, which I conceive must have penetrated the coats of the brain. For several days after the operation, the fits were frequent and violent: after the irritation, occasioned by the operation, had subsided, they diminished very much, and, for a considerable time previous to his leaving the Hospital, he appeared quite relieved.

THOMAS MASSIE; M. D.

*Letter to the Editor, dated London,
February 1st, 1805.*

36. Some cases of Small-Pox have lately appeared in London, *after* the Vaccine disease. A Committee of Physicians appointed to inquire into the matter, have published a *Report*, which I would send you if I had a proper conveyance. In the *three* cases they mention, the vaccine disease had been complete. About two months after, *these* patients received the small-pox by contagion, attended with all the characteristic marks of the disease. *They all recovered.*

DR. THOMAS MASSIE.

Letter to the Editor.

37. It gives me great pleasure to learn, from your letter of the 25th of April, that the Vaccine Disease maintains its credit undiminished with you. It does the same with us, in every case where it has been properly conducted : but from the carelessness, inattention, or ignorance, I will not say the design, of some inoculators (though, from their clamour against substituting the vaccine in the place of the variolous disease, they have given cause for suspicion), there have been three or four instances of persons, who have been said to have had the vaccine disease, that have taken the small-pox this season ; but not one that has had the operation performed, and pronounced safe, by any practitioner of reputation. Some, who have taken the chicken-pox, have been pronounced, by the ignorant and inexperienced, to have had the small-pox ; and there is a *report*, but whether founded on fact or not I cannot tell, that certain quacks have inoculated persons with the chicken-pox matter, after they have had the kine-pox, for the nefarious purpose of bringing the vaccine inoculation into discredit.

I find the scab of the vaccine pock retains the infectious principle much longer than the lymph, and, when recent, communicates the genuine disease with equal certainty, if properly diluted and rendered fluid. For this important discovery, we are indebted to Dr. Bryce, of Edinburgh.

DR. WILLIAM CURRIE.

*Letter (dated Philadelphia, May 17th, 1805)
to Dr. Tucker Harris, of Charleston.*

38. The Editor has employed, with very evident and even remarkable advantage, the Gum R. Kino, in combination with Gentian, or with Columbo, in several cases of intermittent and remittent fevers. In some of these cases, both the Peruvian bark and Arsenic had been previously employed, but without effecting a cure, or without *essentially* moderating the frequency or violence of the paroxysms. The medicine was always exhibited during the states of intermission or remission, and was seldom given in large doses. From five to eight grains of the kino, with from four to six grains of the gentian or columbo, were exhibited two or three times in the course of the day. When the medicine proved somewhat laxative, which was occasionally the case, it was used in combination with small doses of opium.

39. In a case of rather *mild* Gonorrhœa, which came under the notice of a physician (in Pennsylvania), an injection composed of white vitriol (sulphate of zinc) and of the sugar of lead (acetite of lead) was advised. By mistake, instead of the white vitriol, a few grains of tartar-emetic (antimoniated tartrite of potash) were put into the vial. The consequence was, that after the use of a very small portion of the preparation, containing, in all, about one grain of the tartar emetic, the discharge from the urethra was greatly increased in quantity, its yellow colour much heightened, at the same time that it was considerably

mixed with blood. The powerful irritation, thus induced, continued for several days, notwithstanding the mildest injection of the sugar of lead was resorted to, and the patient carefully observed the most rigid adherence to every part of the antiphlogistic mode of treatment.

This case (and the Editor has heard of at least one other, nearly of a similar kind) seems well calculated to show the powerfully-stimulating operation of this preparation of antimony upon the delicate internal surface of the urethra. But, perhaps, the physician may sometimes avail himself of this violent effect of the tartar emetic, and turn it to a very beneficial account in practice. In cases of *hernia humoralis*, depending upon the sudden suppression of the discharge from the urethra, whether that suppression have been occasioned by the use of injections too astringent, by the application of cold, &c., might it not be advantageous to try the effect of a solution of tartar-emetic, in the shape of injection? It would not be necessary, nor even safe, to use the injection strong. It is believed, that the antimonial medicine, in the proportion of one grain and a half, or, at the utmost, two grains, to eight ounces of water, would, in most cases of such hernia humoralis, be sufficient to renew the discharge.

EDITOR.

40. The Editor is informed, that several cases of the disease of Bronchocele, or Goitre, have, within the last

four or five years, occurred, especially among females, at, and in the vicinity of, the town of Fort-Cumberland, in Maryland. This town is situated at the confluence of Wills-Creek and the river Patowmak, at the distance of a few miles south of the southern boundary of Pennsylvania. The creek arises in, and passes through, Wills-Mountain, one of the eastern *spurs* of the Alleghaney-chain. The atmosphere at Cumberland is unusually *moist*, and often *foggy*.—In the course of a late journey, the Editor had an opportunity of seeing some cases of the same disease, in the great calcareous valley of Maryland, in the neighbourhood of the Patowmak, and some of its branches, at the distance of about sixty miles from Fort-Cumberland.

41. The Editor thinks that he has exhibited, with most unequivocal advantage, the muriate of lime in a case of Goitre. The patient was a young lady, aged about sixteen, and had previously used, with *some* advantage, the nitric acid, exhibited internally. The disease is not yet (November 28th, 1805) *completely* removed: but exists in so small a degree, that the tumour on the anterior part of the neck occasions not the least deformity, and would hardly be observed but by one who had been informed of the previous extent of the affection. It may be worth attending to this hint, in those parts of the United-States, in which Goitre prevails.

ARCHAEOLOGIA.

42. The artificial works, best known by the name of FORTIFICATIONS, are daily discovered, in great numbers, and many of them of vast extent, in various parts of the United States, particularly in the fertile countries adjacent to the rivers Ohio and Mississippi, and their branches. In some of the tumuli, or barrows, connected with these works, copper implements, of different kinds, have been found. So that there can be no doubt that the people who formed, or who possessed, these works, were acquainted with the use of copper. But how far this metal was in *general* use among them, we are not yet prepared to determine. This point, however, may be determined, at some future period.

Bishop Madison's ingenious speculations concerning the *design* of the works alluded to*, have induced some persons to suppose, that they were never intended to serve the purposes of fortifications. But for whatever purposes they were used, it is certain, that these works could never have been constructed by a people in the state of society in which the Europeans found the Indian inhabitants of the tracts of country in which the supposed fortifications are so abundantly distributed: and we seem to proceed with entire safety in asserting, that they must have been constructed by tribes, or nations, who were *extremely numerous*.

* A Letter on the supposed Fortifications of the Western Country, from Bishop Madison, of Virginia, to Dr. Barton. See Transactions of the American Philosophical Society. Vol. vi. Part 1. No. 26.

The Reverend Mr. Harris, of Massachusetts, has lately favoured the public with some additional observations concerning the design of these works, and concerning the people by whom they were erected*. But this gentleman's hypothesis on the latter subject is not, in any essential respect, different from that which the Editor of this *Journal* published, several years ago, viz. first in 1787, and again in 1796†.

EDITOR.

43. Some time ago, I was in conversation with a Mr. Nathaniel Brittain, living in Mount-Bethel township, on the topic of some of our American antiquities. He told me, that a Mr. Gaston, and another person, whose name I have forgotten, who were formerly his neighbours, had emigrated to some of the western counties of this state (Pennsylvania), and a few years since paid him a visit, when he was informed by them, that, at some salt-lick, which afforded a small quantity of brackish water (I think he said on Gaston's land), under a belief, if they were to dig a hole to some depth into the earth, a greater quantity of salt-water might be acquired, they, accordingly, dug down some depth, when they came to the side of a rock, from whence the water

* *Journal of a Tour into the Territory North-West of the Alleghany Mountains, made in the Spring of the year 1803, &c., &c.* Boston: 1805.

† See *Observations on certain parts of Natural History, &c., &c.* London: 1787;—and *Papers relative to certain American Antiquities, &c., &c.* Philadelphia: 1796. 4to.

seemed to filter; that on clearing the earth from the rock, they found an old Pot (I forget whether of iron or earth), a Shovel, and some Tubes, through which the water appeared to have been conveyed.

At another place, at some flat near a river, a man began to dig a well, and, after working to some depth, he came to a large Flat Stone. This he worked out, and found it to cover an old Walled Well, with water at the bottom.

I should think these to be subjects worthy of the inquiry of your friend B******, and, if the reports were found to be true, they would make a curious addition to his work on *American Antiquities*.

MR. JOHN ARNDT.

*Letter to Mr. John Heckewelder, dated
Easton (Pennsylvania), March 16th,
1800.*



44. A Venus, without a head, has been found about three miles from Syracuse. It is said, by connoisseurs, to be far superior to the *Venus de Medicis*.

DR. CUTBUSH.

Letter to the Editor.

LANGUAGE.

45. The Language of the Osage-Indians, who dwell upon the waters of the Missouri, and within the limits of the United-States, is found, by the Editor, to be a dialect of the language of the Naudowessie, or Sioux, Indians. This appears to be one of the *mother* languages of North-America. It abounds in monosyllabic and dissyllabic words, and may be traced, in the most unequivocal manner, to some of the existing dialects of the old world. Its relation to the FINNIC, both of Europe and of Asia, is very striking.

The Editor's recent inquiries have convinced him, that there is much less foundation than has been supposed for the assertion, that the number of *Radical* languages in North-America is very great. On the contrary, he is of opinion, that all the *known* Indian dialects; within the limits of the United-States*, may, proceeding upon just and cautious principles, be referred to two or three general *stocks*; and even *these*, agreeably to the strict import of the word, do not seem to be *radically* different from each other.

EDITOR.

* All that are known to him, amounting to at least one hundred and twenty dialects, specimens of the whole of which he intends to publish.

LITERARY AND PHILOSOPHICAL INTELLIGENCE.

46. Dr. B. Bjornlund has published at Abo, in Sweden, a small octavo volume, consisting of about 180 pages, entitled, *Materia Medica Selecta*. The articles, of which the author has given an account, are arranged *alphabetically*. As a specimen of the author's manner of treating his subject, we shall select the whole of the article Arsenic, p. 23.

“ ARSENICUM *album*.

“ VIRTUS: maxime corrosiva, toxica.

“ USUS: Cancer occultus & apertus, Febris intermittens.

“ OBS. In cancro tam occulto quam aperto, LEFEBURE pro usu interno, commendat solutionem hujus, ad quatuor grana, factam in triginta duabus unciis aquæ destillatæ, unde cochlear, cum pari quantitate lactis, per diem ingeritur sensim ascendendo ad 6 cochlearia, partitis vicibus, de die. Hanc solutionem paullo fortiore redditam, & cum tertia parte vini rubri remixtam, *externe*, pro lavacro in cancro aperte præcipit. Verum, cum noxam deleteriam, usus ejusmodi internus, licet circumspectus, facile adferre queat, satius est ab hoc abstinere, admisso solum usu externo in ulceribus faciei cancerosis, in quibus, secundum experientiam Illustr.

D:ni. Equ. AB ACREL, administratio hujus externa
cauta, sæpe auxilium præstitit."

47. Our University (Kiel) has considerably increased the number of its institutions for the improvement of Medicine and Natural History. We have now got a Botanical Garden, which begins to flourish. We have lately opened an Academical Hospital, and a house for Lying-in Women. The young Weber and Mr. Mohr (the last an excellent botanist) now publish a *Botanical Magazine*, which contains many good treatises.

Entomology finds many friends in Germany. A Dr. Klug has published a volume, in quarto, with fine engravings, on the genus Sirex. It is a work of great merit, and written in the true Linnæan spirit of natural history. He proposes to publish, in the same manner, the other genera of this class.

A Mr. Meigon, at Aix la Chapelle, has published a system of the *Diptera* of Linné, in two volumes, and a third is preparing. This work contains only German Insects, but the author takes the characters of his genera from all the parts of the bodies of the insects, and thus establishes a great number of genera.

I take the liberty of sending to you my *Systema*

*Rhyngotorum**, the *Systema Piezatorum†*, and also a German work relative to my Lectures on Natural History‡. These three have been published during the last year.

PROFESSOR FABRICIUS.

*Letter to the Editor, dated Kiel,
1805.*

48. An Italian physician, at Messina, has nearly completed the translation of all Dr. Rush's works.

DR. CUTBUSH'S Letter,
dated January 10th, 1805.

49. Dr. William Liebsch has published, at Göttingen, a German translation of the Editor's *Memoir concerning the Disease of Goitre, as it prevails in different parts of North-America*. This translator has enriched his edition with many valuable notes.

A translation of the same work, into the Spanish language, has appeared at Guatimala.—The disease of

* *Systema Rhyngotorum*, secundum ordines, genera, species adjectis synonymis, locis, observationibus, descriptionibus. Brunsvigae: 1803. 8vo. in one volume. EDITOR.

† *Systema Piezatorum*, secundum ordines, genera, species, &c., &c. Brunsvigae: 1804. 8vo. one volume. EDITOR.

‡ Resultate, &c., already referred to. See page 165 of this part of the Journal.

Goitre is very common in this and in other parts of South-America.

Some other articles, more properly belonging to this than to any preceding head of the *Journal*, may be seen in pages 175, 177, 178.

50. For the following highly interesting communication, the Editor is indebted to his good and learned friend, Professor C. D. Ebeling, of Hamburgh. The date of the Professor's letter is October 9th, 1804, but it was not received before the month of July, last. It is believed, however, that not a little of the information thus communicated, will be found *new* and acceptable to our readers.

" Our Literature is still very fruitful; certainly too much so. We compare it to a herd of rabbits, which increase, and ruin the land in which they whelp. The present Michaelmas-fair inundates us with at least 1500 books, including pamphlets, magazines, &c., and those which have only a *new title-page*, because they did not sell sufficiently well under their former one. Two hundred and forty-eight booksellers sell them. The class of *novels* has shamefully increased to 125. Our critics do their best to check this nuisance: but every female creature, even servants, will amuse themselves by reading. Happily, the study of *real History* begins to gain ground. Many of our entertaining almanacs (68 are published for the next year, poetical, moral, historical,

some even with little novels) are of historical and geographical argument.

“ The more serious sciences increase daily. The Universities of Germany are in great agitation. Professors are sought for, and emigrate everywhere. The newly-modelled Universities in Bavaria, viz. Ingolstadt and Würzburg, where even *protestant* Theology is protected, and new professorships thereof established; the many new universities in Russia, which take almost all their professors from Germany, and whither more than thirty were called, and liberally paid (some 4 to 6000 rubles, or dollars, *per annum*, besides a dowery for their wives, in case of death, &c.), has occasioned this emigration. This even increases the number of authors; for many wish to recommend themselves for promotion.

“ The *Medical Annals* of Hufeland go on (the 19th volume has appeared), as well as his Reviews of physical books. Voight’s *Collection* for Natural Philosophy is continued: Beckmann’s *Oeconomical and Physical* (that is, in the German sense, natural philosophical) *Library* also. It contains only Reviews. Scherer’s *Chemical Journal* is continued by him, and many others. Several new Medical Magazines and Reviews have commenced, as two for the *Medicina Forensis*; and a *Journal* of new and real inventions.

“ Richter’s excellent *Chirurgical Library* is published rather slowly. Several of the practice of physic, as well by BRUNONIANS (at the head of whom is the warlike professor Roschlaub, now at Landshut) as by

ANTI-BRUNONIANS, or by Eclectics. Even Galvanism and Vaccination had their own critical journals, and periodical collections.

" But I proceed to speak of *Books*. Professor Sprengel, at Halle, has published the 3d volume of his *Anleitung fur Kenntniss der Gewachse*, which is an introduction to the knowledge of Cryptogamic plants. Willdenow has continued his Linne*, and has begun a *Hortus Berolinensis*, of which three fasciculi have appeared, with very fine coloured prints (each three dollars, German money) : Wendland's *Ericarum Icones*, the 12th fasciculus (2 dollars). Schkuhr has begun a work on the Cryptogamic plants of Germany : each fasciculus, in 4to, with many very exact and coloured engravings, at 5 dollars. He is professor at Wittenbergh, and is considered the best continuator of Hedwig's Researches. Jacquin's *Hortus Vindobonensis* is reprinted, very neat and cheap, though not so splendid as the original of Vienna. Rebentisch has published a *Prodromus Florae Neomarchiae* (of Brandenburg), with a preface by Willdenow. Persoon, at Gottingen, has published *Icones pictae Fungorum rariorium*, fasc. 1. ($2\frac{2}{3}$ dollars) : he describes them in a methodical order. Hoffmann has gone to Moscow, and has published only a small volume of his pocket-book *Deutschlands Flora*. Esper (the same who is author of a very good systema-

* *Species Plantarum, &c.* I have seen the first eighteen classes (*Monandria*—*Polyadiphia*) of this laborious and useful work. Mr. Willdenow has also finished the vast and difficult class of *Syngenesiae*: but this I have not seen; and am incapable of saying what has been his success in this part of the work. EDITOR.

tic work on German and Exotic Butterflies) has continued his delineations of *Algae*. Bridel's *Muscologia recentiorum* is increased by the third part of the third volume.

"Blumenbach has given a *Specimen Archaeologiae telluris terrarumque imprimis Hannoveranarum**, and has continued his *Delineations of Natural Productions*, fascic. vii. 4to. Hermann's *Observationes Zoologicae*, vol. i. were published at Strasbourg, P. 1. 4to. (3 dollars). Dr. Fischer, of Mayence (now at Moscow), has begun the *Anatomy of the Maki*, vol. i. gr. 4. with 24 copperplates, which is said to be an excellent monography.

"Entomological works are continued. Fabricius reforms his system. * * * * Klug's *Monographia Sericum Germaniae* is much praised. Berolini: 4to. ($3\frac{1}{2}$ dollars). Panzer's Insects of Germany were continued by fascic. 91—93. 12mo. Herbst's work on Butterflies, the 11th vol. has appeared (10 dollars), with coloured plates.

"Mineralogy has not gained very much by our latest productions. Hauy's System has been translated by

* This very interesting paper, which is worthy of its learned and ingenious author, is published in the 15th volume of the *Commentationes Societatis Regiae Scientiarum Gottingensis*. Gottingae: 1804. This volume contains G. F. Hoffmann's *Asterum Horti Gottingensis decas prima*, and the same author's *Veronicarum Horti Gottingensis decas*; not to mention many other important papers, by Wrisberg, Gmelin, Richter, Mayer, Tychsen, &c., &c.

Karstew, two volumes, with the translator's annotations (10 dollars). The Mineralogical Society at Jena has begun to publish their transactions. Jena : 8vo. ($1\frac{1}{2}$ dollars). The Editor is Professor Lenz.

“ Vaccination is generally introducing. A new remedy against intermittent fevers, viz., simple joiners' glue (*colla* in Italian), has been discovered by Seguin and Gautieri (the latter a young and amiable physician, who was several years in Germany, and is now at Novara, in Italy), or any other gluten, such as from calves'-feet, &c. It is given before the paroxysm, and is said to perform wonders. Gautieri, and, perhaps, twenty other Italian physicians (in the Milanese, &c., where these fevers are endemical, especially where rice is cultivated), have published the results of their experiments. Bischof, at Berlin, has translated their memoirs into German, and the Prussian physicians have confirmed the effect. In order to make the gluten palatable, they join to it some cinnarion, or other aroma. English and Dutch glue were found equally good. This may be a salutary practice in many American marshy places. The glue ought not to be too much diluted with water : two ounces are sufficient to dissolve eleven or twelve drams of glue, which should be broken into small pieces, and boiled by a slow, mild fire. If it coagulates again, the glass in which it is preserved should only be put on ashes, and, with the help of a little water, it will soon become fluid again.

“ Gautieri gave to an old lady, aged sixty years, the gluten in doses of six ounces daily, and cured her, on

the third day, of a violent tertian fever. The gluten from calves-feet produces the same effect as other gluten, at the same time that is more palatable, and sits easier on the stomach. It may also be given in greater quantities than common glue, which often occasions nausea. In Russia, the country-people commonly cure such fevers with a thick soup, prepared from calves-feet.

“ Galvanism still shows its effects in curing deafness, paralytical and similar cases, but not when employed in Sprenger’s way; only by the soft influence of a few layers, and by long and patient continuation. Aldini’s experiments (in the philosophical way) have been translated by Martens.

“ Pfaff, at Kiel, has published the third edition of Brown’s *System*, with critical dissertations upon it.

“ Harles, at Erlang, has written on the danger of spreading the yellow-fever in Europe. Its effects at Malaga are terrible this year. The town is greatly deserted, and three thousand persons have fallen a sacrifice to the disease, which even penetrated into the ships in the harbour.”

51. The Trustees of the University of Pennsylvania have established a PROFESSORSHIP OF SURGERY, to which, in the month of June last, they appointed Philip Syng Physick, M. D., of Philadelphia.

52. It is with the highest degree of satisfaction that we announce the establishment of a

BOTANICAL GARDEN

at Charleston, in South-Carolina. Under the patronage of the opulent and well-informed citizens of this metropolis, we cannot entertain a doubt of the prosperity of this institution, which, we hope, will ultimately contribute, in an eminent degree, to diffuse a taste for, and to extend the empire of, BOTANICAL SCIENCE in the extensive countries of the United-States.

It is well observed, by an eminent physician of Charleston, that the “climate” of South-Carolina “is too warm for anatomical pursuits; but” that “its natural history is yet unexplored, and presents an ample field for investigation. The studies of Botany and chemistry (he continues) are particularly useful in our new country. Without a knowledge of their principles, we will remain unacquainted with half the riches and resources we possess, in our vegetables, and minerals. Little has been done among us, in this way, since the days of Garden and Walter. Let us renew the subject, and prosecute it with increasing ardour*.”

* A Review of the Improvements, Progress, and State of Medicine in the 18th Century, page 45. By David Ramsay, M. D. Charleston: 1801.

APPENDIX.

RAPPORT

*Sur le Fœtus trouvé dans le Ventre d'un Jeune Homme
de quatorze ans.*

M. DUPUYTREN, chef des travaux anatomiques de l'Ecole de Médecine, a fait à la Société, au nom d'une commission composée de MM. *Cuvier*, *Richard*, *Alphonse Leroy*, *Baudelocque* et *Jadelot*, un rapport sur le fœtus trouvé dans le ventre du jeune *Bissieu*, de Verneuil, département de l'Eure.

Le phénomène qui fait le sujet de ce Rapport, avait excité presqu'au même degré l'attention des physiologistes par sa singularité, et celle du ministère public, par la publicité qu'il a eue, et les explications qu'on en a données, lorsqu'un ministre (M. *Chaptal*), aussi attentif aux progrès des sciences, qu'au maintien de la morale publique, chargea la Société de l'Ecole de Médecine d'examiner ce fait extraordinaire. Dans les cas qui, comme celui-là, s'éloignent des lois communes, la

sagesse consiste également à n'admettre que des faits rigoureusement prouvés, et à ne pas assigner des bornes trop étroites à la puissance de la nature. C'est d'après ces principes qu'a été fait le rapport dont nous allons donner une idée très-succinete. Il renferme, avec de très-grands développemens, l'histoire du jeune homme qui portait ce fœtus, celle de l'ouverture de son corps, la dissection du fœtus lui-même ; enfin, des considérations physiologiques qui servent de conséquences au travail de la commission.

Amédée Bissieu, dans le corps duquel a été trouvé le fœtus, s'était plaint, dès qu'il avait pu balbutier, d'une douleur au côté gauche ; ce côté s'était élevé, et avait présenté une tumeur, dès les premières années de sa vie. Cependant ces symptômes avaient persisté sans empêcher les développement des facultés physiques et morales de cet enfant, et ce n'est qu'à l'âge de treize ans que la fièvre le saisit tout-à-coup. Dès-lors sa tumeur devint volumineuse et très-douloureuse ; quelques jours après, il rendit par les selles des matières puriformes et fétides. Au bout de trois mois seulement de l'invasion de cette première maladie, une sorte de phthisie pulmonaire se manifesta. Peu de temps après, le malade rendit par les selles un peloton de poils ; et, au bout de six semaines, il mourut dans un état de consomption des plus avancés.

A l'ouverture de son corps faite par MM. *Guérin* et *Bertin des Mardelles*, on trouva dans une poche adossée au colon transverse, et communiquant alors avec lui, quelques pelotons de poils, et une masse organisée,

ayant plusieurs traits de ressemblance avec un fœtus humain. Il serait difficile de ne pas appercevoir de liaison entre l'indisposition habituelle du jeune *Bissieu* et sa maladie ; entre celle-ci et les faits observés à l'ouverture de son corps. Ce premier point, fondé sur des procès-verbaux authentiques, étant solidement établi, il était de la plus haute importance de déterminer la position de la masse organisée, et le lieu où elle s'était développée. Or, l'examen des pièces remises à la Société par M. *Blanche*, chirurgien à Rouen, ne laisse aucun doute qu'elle ne fût renfermée dans un kyste situé dans le mésocolon transverse, au voisinage de l'intestin colon, et hors des voies de la digestion. A la vérité, ce kyste communiquait avec l'intestin ; mais cette communication était récente, accidentelle en quelque sorte ; et on voyait manifestement les restes de la cloison qui séparait ces deux cavités.

La vraie position de cette masse organisée ayant été déterminée, il fallait en reconnaître la nature. On trouvait dans ses formes un grand nombre de traits de ressemblance avec un fœtus humain, mais on y voyait en même temps une foule de dispositions particulières, dont les unes paraissaient tenir à des vices de conformation, et les autres à des déformations successivement produites par le temps, et par le séjour qu'elle avait fait dans le mésocolon. Il était un moyen plus sûr de déterminer le véritable caractère de cette production ; il est évident que si elle renfermait des appareils, d'organes indépendans de ceux du corps auquel elle était attachée, elle devait constituer un individu ; tandis que si elle n'offrait que des prolongemens organiques, elle

rentrait, quelles que fussent ses formes extérieurs, dans la classe des végétations qui s'élèvent de toutes les parties des corps organisés, et dès-lors elle cessait d'être un phénomène. La dissection de cette masse, faite avec un soin extraordinaire, y a fait découvrir la trace de quelques organes des sens ; un cerveau, une moëlle de l'épine, des nerfs très-volumineux ; des muscles dégénérés en une sorte de matière fibreuse ; un squelette composé d'une colonne vertébrale, d'une tête, d'un bassin, et de l'ébauche de presque tous les membres ; enfin, dans un cordon ombilical, fort court et inséré au méso-colon transverse, hors de la cavité de l'intestin, une artère et une veine ramifiées par chacune de leurs extrémités, du côté du fœtus, et du côté de l'individu auquel il tenait. L'existence des organes précédens, suffit certainement pour établir l'individualité de cette masse organisée, quoique d'ailleurs elle fût dépourvue des organes de la digestion, de la respiration, de la sécrétion des urines, et de la génération ; seulement, l'absence d'un grand nombre d'organes nécessaire à l'entretien de la vie, doit la faire regarder comme un de ces fœtus monstrueux destinées à perir au moment de leur naissance.

Le développement d'une masse organisée dans le mésoColon, étant bien constatée, son analogie avec un fœtus humain étant bien démontrée, il restait à rechercher depuis quand elle y était, pourquoi elle se trouvait dans le corps d'un autre individu, et comment elle avait pu y vivre ?

Ce fœtus étant *hors du canal alimentaire*, on ne pouvait pas admettre qu'il eût été introduit dans le corps du jeune *Bissieu* après la naissance; ce qui détruit le plus grand nombre des hypothèses inconsidérées qu'on a proposées pour expliquer ce phénomène. Le sexe du jeune *Bissieu*, bien constaté par MM. *Dalzeuse et Brouard*, sur l'invitation de M. le Préfet de l'Eure, ne permettait d'ailleurs ni de penser qu'il eût été fécondé, ni qu'il eût pu se féconder lui-même, puisqu'il était pourvue d'organes mâles, et qu'il n'offrait pas la plus légère trace de ceux du sexe féminin.

Les faits qui servent de base au rapport, conduisaient naturellement à des idées différentes de celles-là; l'in-disposition à laquelle le jeune *Bissieu* était sujet depuis son enfance; la nature des symptômes qui la caractérisaient; ceux de la maladie qui lui a succédé immédiatement, et les faits découverts à l'ouverture de son corps, sont tellement liés qu'il est impossible de ne pas voir entre eux une dépendance nécessaire, et de ne pas admettre que ce jeune infortuné a porté en naissant la cause de la maladie à laquelle il a succombé au bout de quatorze ans seulement. Beaucoup d'autres faits se réunissent encore pour prouver l'ancienneté de l'existence de ce fœtus dans le corps du jeune *Bissieu*. Tels sont le volume de ses dents, la dégénération fibreuse de ses muscles, le racornissement du cerveau, l'usure de la peau dans un grand nombre de points, la carie de plusieurs os, la soudure de la plupart d'entre eux, la dégénération osseuse du kyste lui-même, etc., etc.: dispositions qui, pour se développer, exigent presque toutes un temps fort long. Mais en admettant que ce fœtus

soit contemporain de l'individu auquel il était attaché, il restait toujours, pour ceux qui veulent tout expliquer, une grande difficulté à lever, celle de sa situation dans le mésocolon transverse. Les faits curieux, exposés dans ce rapport, en sont certainement la partie la plus importante, et ils sont, jusqu'à un certain point, indépendans des explications qu'on en peut donner ; cependant il entraînait nécessairement dans le plan d'un semblable travail de faire servir les faits à l'explication du phénomène. Il n'est pas rare de voir des jumeaux naître accolés soit par le dos, soit par le ventre, soit par la tête, soit par plusieurs parties en même temps ; une compression plus ou moins forte, exercée par les organes de la mère sur des embrions extrêmement mous, pendant la conception, ou peu de temps après, peut produire ces monstruosités ; dans d'autres cas, qui ne sont pas non plus très-rares, les jumeaux sont tellement identifiés, que plusieurs organes manquent à chacun d'eux, et sont remplacés par des organes communs qui servent à-la-fois à la vie des deux. Dans le premier cas, la monstruosité est due à une cause toute mécanique ; et dans le second, elle tient à un vice primitif dans l'organisation des germes. Il faut nécessairement remonter à l'une ou à l'autre de ces causes pour expliquer le phénomène qui fait le sujet du rapport ; ainsi, dans le cas du jeune *Bissieu*, ou bien, de deux germes d'abord isolés, l'un a pénétré l'autre par l'effet de quelqu'action mécanique, ou bien, par une disposition primitive dont il serait aussi difficile de rendre raison que de tout ce qui a trait à la génération, ils se sont trouvés entre eux dans les rapports où on les a vus par la suite.

L'une de ces explications étant admise, l'existence d'un fœtus dans l'abdomen d'un autre individu, n'a plus rien qui doive surprendre beaucoup, et le sexe de celui qui lui a si long-temps servi de mère, devient à-peu-près indifférent. Ce fœtus peut être comparé au produit des conceptions extra-utérines : en effet, à quelques parties de l'abdomen que s'attachent des germes fécondés, leur mode de nutrition est le même ; ils puisent dans toutes, à l'aide de vaisseaux qui leur sont propres, des liquides nourriciers ; ils se développent et s'accroissent jusqu'au terme marqué par la nature pour leur expulsion ; et s'ils ne peuvent être expulsés lorsque ce terme est arrivé, ils se putréfient, se convertissent en gras, se dessèchent, s'ossifient, ou bien ils végètent, jusqu'à ce que leur présence, en irritant les parties voisines détermine la formation d'abcès, et provoque ainsi leur sortie. C'est ce qui est arrivé dans ce cas : les parois du kyste où était renfermé le fœtus qui nous occupe, comme tous les fœtus placés hors des voies ordinaires de la génération, se sont enflammés, et l'inflammation s'est communiquée à l'intestin ; la cloison qui séparait ces deux cavités a été détruite ; le kyste a communiqué dans le colon ; du pus et des poils ont été rendus par les selles, et une véritable phthisie abdominale, compliquée dans son cours avec une phthisie pulmonaire, a fait périr le malade. Placé plus près de la surface du corps, le kyste ne se fût point ouvert dans l'intestin, et ce phénomène, sans changer de nature, eût cependant paru moins extraordinaire.

Ce fœtus a été nourri aussi long-temps qu'a duré la vie de celui qu'on doit regarder comme son frère ; l'ab-

sence de toute espèce d'altération putride dans son corps, et la perméabilité de ses organes de la circulation, ne laissent aucun doute à cet égard : le défaut des organes de la digestion, de la respiration, de la sécrétion de l'urine et de la génération, ne fournit point une objection contre la vie de ce fœtus, puisque ces organes simplement nourris dans les fœtus ordinaires, n'exercent leurs fonctions qu'après la naissance. Mais cette vie a dû se composer d'un très-petit nombre de fonctions, à cause de la structure particulière de ce fœtus ; les seuls organes de la circulation exerceaient chez lui une action nécessaire à la vie de tous les autres. Ils prenaient et donnaient successivement le sang du mésocolon au fœtus, et du fœtus au mésocolon.

La Société de l'Ecole de Médecine, après avoir entendu la lecture de ce rapport remarquable par l'étendue et l'exactitude des recherches qu'il renferme, ainsi que par la liaison des faits avec les conséquences qui le terminent, a arrêté qu'il serait inséré, en entier, dans le premier volume de ses œuvres, ainsi que les dessins faits sur toutes les parties du corps du fœtus, par MM. *Cuvier et Jadelot.*

La même commission fera incessamment un second rapport sur les faits présumés analogues à celui-là et qu'on trouve consignés dans les auteurs.

* The preceding highly interesting Report is republished, at length, from the *Bulletin de l'Ecole de Médecine de Paris, et de la Société établie dans son Sein.*

THE
PHILADELPHIA
MEDICAL AND PHYSICAL
JOURNAL.

COLLECTED AND ARRANGED

*** *The PLATE referred to in Article XIX. of the First Section of the present Part, is unavoidably delayed to the next number.*

1806.

PUBLISHED BY

JOHN CONRAD & CO., PHILADELPHIA; M. & J. CONRAD & CO., BALTIMORE; SOMERVELL & CONRAD, PETERSBURG; AND BONSAI, CONRAD, & CO., NORFOLK.

PRINTED BY T. & C. PALMER, 116, HIGH-STREET.

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COLLECTED AND ARRANGED
BY BENJAMIN SMITH BARTON, M. D.,

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IN THE UNIVERSITY OF PENNSYLVANIA.

PART II. VOL. II.

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1806.

DISTRICT OF PENNSYLVANIA SS.

BE it remembered, that on the twenty-seventh day of September, in the thirty-first year of the Independence of the United-States of America, John Conrad, of the said district, hath deposited in this office the title of a book, the right whereof he claims as proprietor, in the words following, to wit: "The Philadelphia Medical and Physical Journal. Collected and arranged by Benjamin Smith Barton, M. D., Professor of Materia Medica, Natural History, and Botany, in the University of Pennsylvania. Vol. II. Part II., 1806," in conformity to an act of congress of the United-States, entitled, "An act for the encouragement of learning, by securing the copies of maps, charts, and books to the authors and proprietors of such copies, during the times therein mentioned," and also to an act, entitled, "An act supplementary to an act, entitled, 'An act for the encouragement of learning, by securing the copies of maps, charts, and books to the authors and proprietors of such copies, during the times therein mentioned,' and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

(L. S.)

D. CALDWELL,
Clerk of the District of Pennsylvania.

THIS PORTION
OF THE
PHILADELPHIA
MEDICAL AND PHYSICAL JOURNAL

IS RESPECTFULLY INSCRIBED

To *WILLIAM MACLURE, Esq.*,

AT PARIS,

BY HIS AFFECTIONATE FRIEND, &c.,

BENJAMIN SMITH BARTON.

*Philadelphia, September 26th,
1806.*



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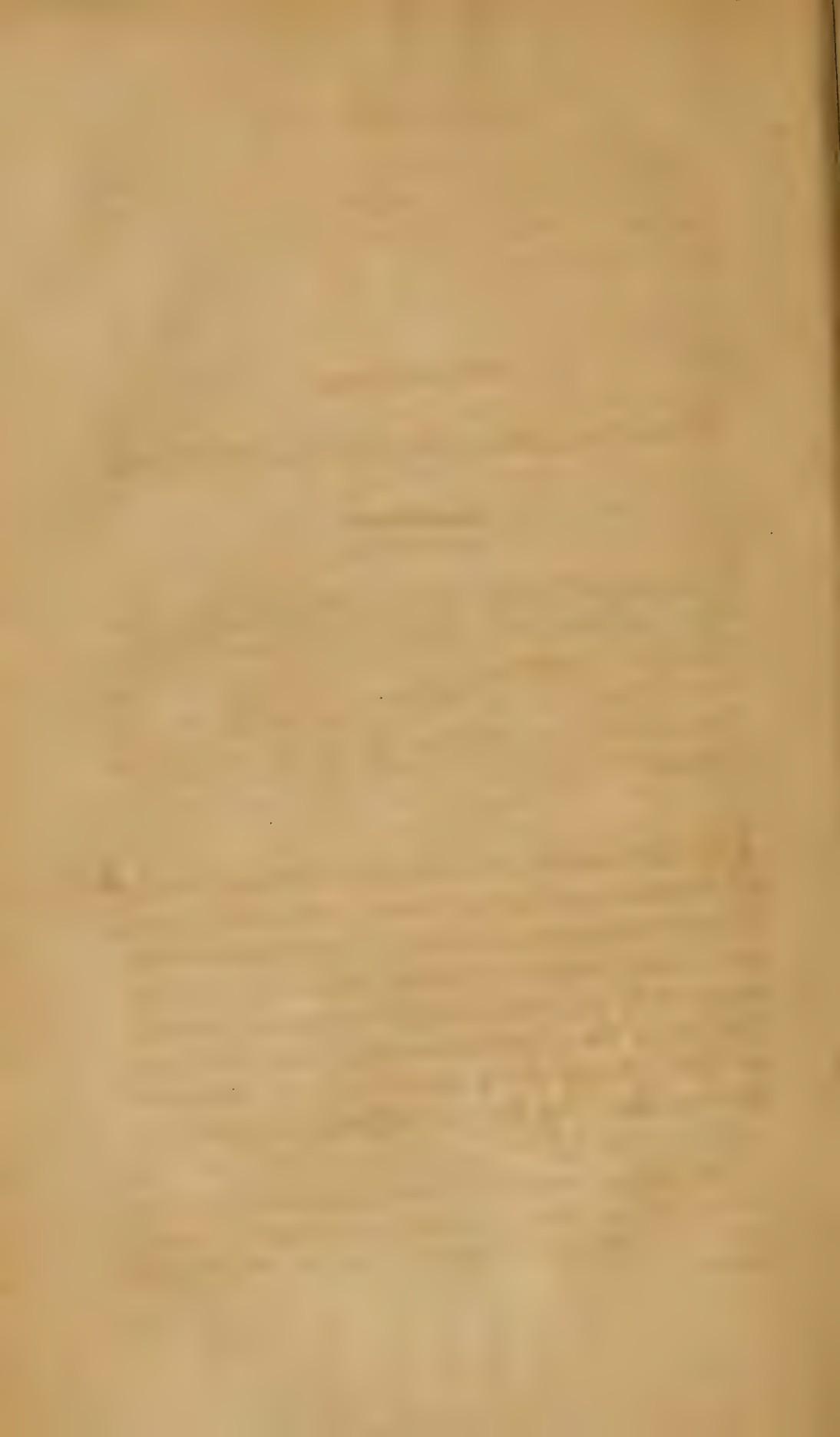
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THE
PHILADELPHIA
MEDICAL AND PHYSICAL JOURNAL.

SECTION FIRST.

VOL. II, PART II.

A



THE
PHILADELPHIA
MEDICAL AND PHYSICAL JOURNAL.

I. *Account of HENRY Moss, a White Negro: together with Reflections on the Affection called, by Physiologists, Leucaethiopia humana; Facts and Conjectures relative to the White Colour of Animals, and Observations on the Colour of the Human Species.*
By the EDITOR.*

HENRY MOSS was born in Goochland-County, in the State of Virginia, in the month of July, 1754. He is of a very mixed breed, if I may be allowed the use of an expressive phrase, which is frequently employed by naturalists when treating of other animals. His father's father, and his mother's father, were born in Africa: but in what particular part, he cannot tell. His own father was born in Virginia, and was a very

* That part of this paper which relates immediately to the case of Moss, was read before the American Philosophical Society, on the 16th of September, 1796, but is now, for the first time, published.

black negro. His own mother was born in the same State, and was a dark mulatto. His own father's mother was an Indian woman, but he is ignorant to what tribe, or nation, she belonged. His mother's mother was an Irish woman*.

Moss has the negro physiognomy, or aspect. He has the *frons brevis*, or short forehead; the *nasus quassatus*, and the *tibiae incurvæ*, so common among the blacks. He has, likewise, the heavy eye of the blacks, and their crised hair, or wool, upon his head. I am not certain, that he appears to be much older than he really is, though this is thought to be the case by some who have attentively examined him. But of this I am certain, that independently on the varied colour of his face, a peculiar gloom pervades his countenance. It may be doubted, whether this is natural to him. For he tells me, that his thoughts are chiefly of the serious kind, and that of late, that is (to use something like his own language), since Providence began to work the miracle, his reflections run much upon the future. This is natural indeed. If the philosopher contemplates with astonishment such a change as this, it must appear miraculous in the sight of this poor, ignorant man, who knows but little of the immense agency of physical causes, and in every thing that is wonderful, and to him inexplicable, thinks he perceives the *immediate* interference of a God. I do not wonder that his reflections are of a serious nature. I even suspect that had a philosopher, a physician, experienced in his own person the re-

* See note A, at the end of this article.

markable change that Moss has done, he would discover that his mind was more frequently than formerly propense to calm and serious reflections, perhaps to indulgencies in superstitious notions.

None of all Moss's relatives, whom I have mentioned, were in the least affected as he is. He has three brothers now living, but they are not spotted, or changed at all.

He says, he himself was originally very black : that is, as black as the unmixed negroes of this country commonly are. Upon his body at present (August 19th, 1796) the darkest spots that I saw are somewhat darker than what we call a chesnut-colour. I think the greater part of the dark ground is of a chesnut-colour, but some of the dark parts, especially upon his fingers, are much lighter. He assures me, that the darkest parts of his body, at present, are not near so dark as they were before the change of his body first began to take place.

Moss was born free. For many years, that is, from the time he was able to the present time, he has principally followed farming. When he is at home, he still follows it. His occupation has been clearing of ground, and similar hard work. But there has not been any thing *peculiarly hard* in his laborious occupation.

I must not omit to mention, that Moss has been a soldier. In the month of August, 1777, he enlisted as a private in the American army, in which he continued almost six years. He was present at the battle of Monmouth, in New-Jersey, in June, 1778 ; at the taking of

Stoney-Point, in July, 1779; and at the siege of Charles-ton, in South-Carolina, in May, 1780.

For several years, Moss's principal diet has been that of labourers in general; what may be called a strong diet. It consisted of beef, pork, bread of the zea, or Indian-corn, besides milk and butter. Through the whole course of his life, he has taken but very little strong drink. His principal drink has been, and still is, water.

Moss has been married thirteen years. But he has never had any children. Perhaps, it is not important to observe, that *he* says, that his ability for the enjoyment of venereal pleasures is not impaired.

Previously to the change which I am about to describe, Moss enjoyed good health. In the autumn of 1777, whilst he was in the army, he was inoculated for the small-pox, and had the disease very favourably. No very remarkable change of the skin followed the disease: none, at least, that appears to be connected with the change of colour of which I am speaking. I must not, however, omit to observe, that those parts of the skin where the pits of the disease have been, are of a lighter colour than the natural complexion.

Last spring four years, the change first began to take place. The first appearances of alteration were very little white or whitish spots at the roots of the nails of both his hands. Since this period, the colour of his body has been gradually changing, and, at present, by

far the greater part of it is white, or rather of a delicate sanguine-white colour. From his shoulders downwards, the greatest alterations from the original dark hue have taken place.

His face is much less changed than the other parts of his body. Parts of it, however, have assumed the healthy sanguine-white colour. Besides these parts, there are, at least, four distinct shades of colour upon his face. *The darkest of these, it has already been observed, is rather darker than what we call a chesnut colour.

He has lost the greater number of his teeth; and those which remain are not good. He has lost some of them (among others, one of the best in his head), *since* the change of colour began to take place.

Before any part of the body changes to the sanguine-white colour, the original ground or dark hue undergoes a change, becoming gradually of a lighter brown. This circumstance agrees with what James, the White Mulatto, whose portrait is to be seen in Mr. Peale's *Museum*, says of himself. "He gave me," says Mr. Peale, "the following account of the changes: a portion of the black becomes of a reddish-brown colour, by degrees, and remains so about six months, when it changes farther, and becomes white*."

* Mr. Peale's short account of the person here alluded to was read before the American Philosophical Society, in October, 1791, and was afterwards published in the newspapers of Philadelphia, &c.

Of the four years that he has been changing, he thinks that the greatest change, in an equal time, took place the second year.

It is remarkable, that, during the winter season, the colour of his body is entirely stationary: that is, the white spots already formed do not, in the least, increase in size; and no new ones make their appearance. It is only, he says, during the spring, the summer, and the autumn, that the process of change proceeds. It takes place much more in summer, or in the extremely warm weather, and when he sweats profusely, than in the spring or fall, or when he sweats less. He supposes, that the rapid change of colour on his hands is, in part at least, owing to his having, of late, accustomed himself to wear gloves, by which means his hands have perspired more than formerly. This looks probable. But I must observe, that in the axillæ, or arm-pits, where the perspiration is considerable, the alteration of colour is less than on many other parts of his body.

At the time the change is taking place, his sweat never tinges, in the least, his linen, or any thing else, of a dark colour. In other words, there does not appear to be any difference between the colour of his sweat now and before the change began to take place.

The epidermis, or scarf-skin, does not, in the least, peel off during the times the parts are changing. The only instances in which this integument has been observed to separate, or peel off, have been when the sun has blistered his body, as upon his back.

I am now to observe, that the parts which have lost their original dark hue have not the white colour, the *color lacteus*, or rather cream-colour, of the greater number of the Albinos of Europe, Asia, Africa, and America, of whom De Saussure, Blumenbach, Castillon, Waser, and several other writers, have published accounts. All the changed parts of the skin, that were examined by myself and others, have nearly the sanguine-white colour of the European and Anglo-American white. Indeed, it is a very delicate sanguine-white colour. In this respect, the case of Moss is peculiarly interesting, and differs from *most* others. But it is not a solitary case. The same sanguine-white colour was as striking in the mulatto James, whom I have already mentioned. Mr. Peale, in his account of this man, says, “ It is a skin of a clear, wholesome white, fair, and what would be called a *better skin*, than any of a number of white people who were present, at different times, when I saw him.”

The celebrated Dr. Pallas has likewise mentioned a case which, in this respect, is similar to the two that I have mentioned. As the work in which this account is given is but little known, in this country, I shall transcribe the learned Doctor’s words. “ Animaliumque varietates albæ * * * * indolis semper debilioris et habitus laxioris sunt, quod in Nigritarum prole lactea, cuius exemplum quondam Londini vidi, præsertim liquet.—Hujus elegantissimæ *Leucæthiopissæ* miror nullibi in publicis scriptis factam fuisse mentionem. Exhibebatur publice Londini sub finem anni 1761., sexdecim tunc circiter annos nata, et a Patre atque Matre

Nigritis in Jamaica insula genita dicebatur, de quo tanto minus dubitari poterat, quum nihil hybridæ ex albo nigroque parente genituræ simile præferet. *Staturæ* erat minoris, artibus et collo turgidulis, *cute* sanguineo-phlegmaticæ tincturæ *candida*, labiis rubris et rubicundis genis vigens, vultu omnino Æthiopis, naso quassato, labris tumidis, fronte brevi, circumscriptione faciei subrotunda, notis variolarum sparsis cutem minus teneram distinguenteribus. *Ocolorum irides* neque rubri nec cœsii, sed gryseo lutescentis erant coloris, neque visus nocturnus, sed tamen apertæ lucis intolerantia, quam præsertim post variolas ortam narrabant custodes. *Cilia* et *supercilia* pallide flava, et *capillitium* totum ejusdem quidem coloris (*blond*) pallide flavi, at penitus in densissimos circinnos crispatum, et duriusculam Aethiopis lanam ad amussim referens. Hebeti videbatur ingenio atque pudibunda spectatores admittebat; sanissima cæteroquin et egregia corporis proportione.—Cognatos omnes nigerrimos Aethiopes habuisse dicebatur. —Cæterum hasce varietates Aethiopum albas non magis morbosam naturam (quod Blumenbachio placuit) appellari posse puto, quam ipsa Aethiopum nigredo morbus est. E sporadicis vero ejusmodi prolibus integros populos sibi tales singere et antiquitas et recentiorum credulitas amavit*.”

I was curious to inquire, whether any of the changed parts of Moss's body ever resume their original, or

* Novæ Species Quadrupedum e Glirium Ordine, cum Illustrationibus Variis Complurium ex hoc Ordine Animalium, auctore Petro Sim. Pallas, Academico Petropolitano. Fasciculus Primus, p. 10 & 11. Erlangæ: 1778.

other, dark hue. In answer to my inquiries on this head, he informed me, that in those sanguine-white parts, where the sun had acted so strongly as to raise blisters, moles, or freckles, of different sizes, have sometimes made their appearance. Upon his back, I examined a number of these freckles, which are of different sizes, and of a dark colour. He says, these freckles are not permanent, but lessen in size, become of a lighter colour, and are gradually disappearing.

About six years ago, he cut his right shin with an axe, and, about the same time, he cut his left knee with a drawing knife. These cut places no sooner healed up than they assumed a dark brown or black colour, similar to the original hue of his body.

There does not appear to be any difference in the smoothness or softness of the skin where the parts continue black or brown, and where they are of the sanguine-white colour. I was, at one time, of opinion, that I could discover a difference; that is, that the white spots were the smoothest and softest: but from subsequent examination, and particularly from the examination of other persons, I am now inclined to believe that I was mistaken. Perhaps, a pre-conceived theory, and a fact which is mentioned by Strahlenberg (see Note B, at the end of this paper) may have deceived me. Moss's skin is soft, lax, and smooth. I particularly examined his arms.

The change which has taken place in the appearance, &c., of his hair, is not, perhaps, as great as might have been expected.

The greater part of the hair upon his head is crisp, or woolly, as in the blacks in general. It is, in general, black, intermixed, however, with some white or grey hairs, which do not appear to be connected with the change of colour of his body. He says, he has had grey hairs on his head, as long as he can remember, and that all his family became grey very early in life. Upon the crown of his head, there is a particular spot, where the greater number of the hairs have lost their crispness. I think the wool of his head is softer than that of blacks in common. He says, his beard is straighter than it used to be. Upon his breast, there is but very little hair, and the greater part of it is crisp, or woolly. Some of the hairs are nearly as straight as those of whites. This straight hair was much more crisp before he began to change. Both the straight and woolly hairs of his breast come out very fast; he thinks, more of the woolly come out than of the straight. This, indeed, he says, is the case all over his body, as well as upon his breast.

Upon his thighs and legs, there is a good deal of straight hair.

The hairs, which are continually coming out from different parts of his body, come out from both the dark and from the sanguine-white parts. He says, the greatest quantity comes out from the latter, or altered parts.

Among all the changes which have taken place, his eyes have continued unaltered, both as to colour and strength. I am inclined to think that this will not always be the case, should Moss live some years longer. I

ground my conjecture on this circumstance, that the colour of this poor man's face is changing pretty fast; and the connection between the colour of the skin and the colouring matter of the eyes has long been observed, by anatomists and physiologists. I am not ignorant, however; that some eminent physiologists are of opinion, that the black or brown pigment of the eyes is never removed after birth. Thus Professor Blumenbach, speaking of the Leucaethiopia humana, says it is a disease, “*Semper insanibilis; quippe oculis unquam pigmentum fuscum post partum demum subnatum esse ne unicum quidem exemplum extat**.” But this eminent physiologist has likewise asserted, that the leucaethiopia humana is always a connate disease. “*Semper connatus morbus est, nunquam, quod novi, post partum acquisitus†.*” Many facts demonstrate, that it is not always a connate disease. I shall not content myself with observing, that the case of Moss and that of the Mulatto James oppose the professor's assertion, because he would, perhaps, rather refer these cases to his head of “*Cutis fusca maculis candidis variegata‡,*” than to that of leucaethiopia humana. But I shall quote what Aulus Gellius writes concerning a certain people in Albania. “*Præteria (says this useful writer) traditum est memoratumque in ultima quadam terra, quæ Albania dicitur, gigni homines,*

* *De Generis Humanæ Varietate Nativæ.* § 78. p. 276. Gottingæ: 1795.

† *Ibid.* § 78. p. 276.

‡ *Ibid.* § 48. p. 150—155.

qui in pueritia canescant, et plus cernant oculis per noctem,
quam inter diem*.”

With respect to the alterations which have taken place in the sensations and in the functions of the body of Moss, I have not obtained all the information which I sought for. Yet to this subject, my inquiries have been directed with peculiar care: for I was sensible that the mere description of a white-negro could not prove very interesting to a society of philosophers, whilst I knew that in a physiological and pathological point of view, a case such as the present would not be deemed unimportant, or trivial in its kind.

From the uniform account which Moss gives of himself, it seems certain, that, along with the loss of his native colour, his skin is considerably more sensible to the influence of heat, of friction, and of other similar causes, than it was previously to the commencement of the remarkable change of his body. This increased sensibility of the skin, which I do not think there is any reason to doubt is of a morbid nature, is evinced by the following circumstances.

First. Moss asserts, that since the change began to take place, he is much less capable of supporting heat than formerly. The same degree of solar heat which formerly he supported without any inconvenience, now “burns,” as he expresses himself, his naked skin, and

* Auli Gellii Noctes Atticæ. Liber ix. caput iv.

even occasions a disagreeable sensation through holes, &c., in his clothes. He supports cold as well as ever.

Secondly. He assures me, that at present he cannot wear the same kind of linen which he was formerly accustomed to wear. Before he began to lose his native colour, he wore a coarse brown linen; but of late he has been under the necessity of laying it aside, by reason of the pain or uneasiness which it excites on the skin. He, at present, wears cottons, and finer linens.

Thirdly. The delicacy or tenderness of his skin appears from another circumstance. He says, the slightest scratch, as with a pin, occasions it to fester. He observes this to be the case much more now than formerly.

He says, he certainly sweats much more since, than previously to, his change.

Although I do not think it at all certain, or even probable, that the peculiar odour of the perspiration of the blacks, whether born in Africa or in this country, is necessarily connected with the colouring matter of the mucous body of these people, I was nevertheless desirous of ascertaining whether the perspiration of Moss is endued with this odour. I think it does not appear to have much, if any, of it. I am the more particular in mentioning this circumstance, because the Abbé Dicquemare, one of the best philosophical naturalists of his country, expressly says, that the young white negress, whom he described, a few years since, had not the

smell of the negroes. I must not omit mentioning, that Moss says, he never had the disagreeable smell, so characteristic of a great majority of the blacks.

He has not observed, that any alteration in the quantity, in the colour, or in the odour, of his urine has taken place within the term of four years; that is, since he first began to change*. Yet he thinks, he is more thirsty than he used to be.

He says, his appetite is as good as ever it was. His senses of seeing and hearing are not, in the least, impaired. He has not the *visus nocturnus* of the Albinos, described by Wafer, and other writers. His sense of smelling is as acute as formerly. His voice has not undergone any change. It is neither tremulous nor weak, but manly. The Abbé Dicquemare says, that the voice of the white negress, already mentioned, was very different from that of the blacks.

To be continued.

NOTES ON THE PRECEDING PAPER.

Note A, p. 3. “I do hereby certify that I have been well acquainted with Harry Moss, who is the Bearer hereof, upwards of Thirty Years, the whole of which time

* It is to be observed, that, until lately, Moss has not had an opportunity of examining his urine.

he has supported an Honest character, in the late war he enlisted with me into Continental Army as a Soldier, and behaved himself as such very well, from the first of my acquaintance with him till within two or three Years past he was of as dark a complexion as any African, and without any known cause it has changed to what it is at present, he was free born, and served his time with Major John Brent of Charlotte County, Given under my hand this 2d Day of September 1794.

(signed) JOSEPH HOLT.

(A True Copy) Bedford County."

Note B, p. 11. As this fact is curious, and the work in which it is recorded difficult to be met with, I shall transcribe it in the words of the industrious author. Speaking of the *Piegaga*, or *Piestra*, that is, the *Spotted or Speckled Horda*, our author says, "I have seen a Man of this Kind in *Tobolsky*, whose Hair was all Shav'd off, except about a Finger's Breadth. He had, all over his Head, Spots as white as Snow, and perfectly round, of the Bigness of a *Saxon double Grosch* (or about the Size of a Shilling), which looked wonderfully odd; Insomuch that I then thought with myself, if this *Tartar* was in *Europe*, he might be shown for a Sight; But the people in *Tobolsky* made so little Wonder at all of it, that they only laugh'd at him. His Body was likewise spotted and speckled, much in the same Manner; The White of the Skin was soft and smooth; But the Spots were blackish Brown, and the Skin was somewhat coarser; however, the Spots were not so regular as on the Head. In my Travels farther into *Siberia*, I saw more of the like People, but speckled in a

different Manner, that is, on their Heads, with Spots not like those of a Tiger, but like a py-ball'd, spotted Horse, *viz.* some long, some oval, and others of another Figure, and the same upon their bodies. Another I saw, whose Hair was one half of it white as snow, and the other half black ; I asked the *Tartars*, whether they were born so ? Their Answer was ; Some were, but that others got it by sickness. Such speckled People are common on the River *Czulim*, and near the City of *Crasnojahr*, on the River *Jenisei*, among the *Kistimian Tartars*."—Historico-Geographical Description of the North and Eastern parts of Europe and Asia, &c. p. 173. English translation.

II. *Memoranda of the Natural History, Diseases, and Native Remedies of some parts of the Island of Hayti. Communicated to the EDITOR, by Dr. AMOS GREGG, Junr., late of Bristol, in Pennsylvania. With additional Facts and Observations, by the EDITOR.*

THE parts to which I allude are Cape Francois, Gonaives, and Port au Prince, with the vicinity of each. I do not attempt to give any thing like a history of every plant, bird, &c., which I saw ; but merely a few detached notices, and such as appeared new to me.

I. NATURAL HISTORY.

ZOOLOGY.

Except the domesticated quadrupeds, I saw none, unless it was a species of *Mus*, which, I think, lives altogether without doors, in marshy, stoney ground.

Mons. L. E. Moreau de St. Mery does, indeed, mention some quadrupeds as being natives, especially a wild species of Hog, but which, he says, has nearly disappeared. I observed a species of Vespertilio. This was in January. These animals do not, it is probable, pass into the torpid state.

The birds, in general, appear to possess but a few simple or distinct notes; or rather, I should say, that they have not learned to vary or modulate them to any thing like music, or song. A few, however, do sing, but not elegantly. Some sing much like our *Turdus rufus* (Thrush), of which family they, certainly, are species.

Permit me to observe, that the language and peculiar mode of flight of birds are, in my opinion, worthy of attention, in distinguishing the families. Thus, I know, from repeated observation, that the language and peculiar mode of flight of the different species of the genera *Columba*, *Picus*, *Ardea*, *Hirundo*, &c., that are known to me, have the greatest similitude: and than these genera none, perhaps, are more natural assemblages of the feathered race. On this subject, much might be said, and I regret the void in this interesting part of the natural history of these animals.

One species of Haytian duck is, probably, the *Anas cœruleocephala*. Body brown, wing-coverts alone pale-blue. White stripe under the eyes. Size of the domestic duck.

There is no Goose in the island.

The Flamingo (*Phoenicopterus ruber*) flies with its feet and head extended in nearly a right line with its body.

I saw a small bird of the order of *Passeres*. It was entirely green, except beneath the chin, or throat, which was of a fine rose-colour.

Some species of *Trochilus*, or Humming-Bird, are found (and I believe there only) at Gonaives. They were the only bird which appeared anxious, by flying round me, to prevent me from discovering their nests. I found these only in cotton-plantations.

There are several species of Pigeon, or Dove. In addition to the Linnæan description, I think may be added, as it is invariable, "Posterior part of the nostril nearest the edge of the bill."

1. *Columba*. Tail even. Body cinereous, breast speckled, black and tipped with pale red. Quill-feathers ferruginous. Small or outer edge and tip black. Tail-feathers black: the two external tipped with white. Irids red. Feet flesh-colour. Inhabits Gonaives, &c. Feeds on a drupaceous fruit. Called Otterlan.
2. Body brown, breast pale-violet. Wing-coverts dark rose. White stripe from the bill under the eyes to

the back of the neck. Bill brown. Eye-lids red : pupil black.

Great caution is used by birds in concealing their nests. I never discovered but two, although I frequently searched, and with care. One was a pendulous nest, within two feet of the ground, built of small sticks, lined and covered with cotton. It had an entrance nearly beneath. I discovered, to my surprize, that it was tenanted by yellow wasps.

At Gonaives, I saw a small species of *Hirundo*, entirely black, and inhabiting the rocks. Size of a Humming bird. Language of the family.

I saw a bird of the appearance, and with the note, of the *Muscicapa Rex* of Professor Barton.

A species of marine Turtle, the *Tustudo imbricata*, which affords the tortoise-shell of commerce, is plentiful : but there are, probably, no Land-tortoises.

I saw no Toads. Frogs begin to sing, and spawn about the 20th of February, several weeks earlier than they do in Pennsylvania.

The species of the genus *Lacerta* are extremely numerous ; but serpents are less frequent than with us, and probably they are all innocent species. I caught a species of *Coluber?*. It was of a fine grass-green-colour, except two lateral yellow lines. Some species are asserted, by the Americans, to possess the power of fasci-

nation. But the Blacks have no such idea. Mr. Moreau de St. Mery mentions a very singular serpent. "On trouve (says he) dans les hauters de la parroise de la Port au Prince, comme dans le reste de la partie de l'ouest, le serpent à tête de chien. Il est très gros et point venemieux." Vol. ii. p. 427.

The Insects of the genera *Libellula*, *Papilio*, *Cerambyx*, *Gryllus*, &c., are very numerous. *Scarabaeus*, *Sphinx*, *Phalaena*, &c., are less so. Lightning-bugs (*Lampyris*?) appear by the middle of April, which is earlier than they do in Pennsylvania.

A variety, I believe, of the *Ostrea edulis* attaches itself to wharves. It is less than the common variety in America. Shape orbicular, with imbricate scales. It, certainly, differs from the *Ostrea parasitica*.

A large species of *Cancer* feeds occasionally on the fruit of the manchineel. When eaten under such circumstances, it frequently induces the most serious complaints, such as, a general swelling of the body, accompanied with excruciating pain. Mr. Faber informed me of two cases, which terminated fatally. A history of these cases, I could not obtain.

FISH.

Order Abdominales.

Body ovate : large head, back angular, snout obtuse, mouth large, retractile. Nostrils oval, transverse. Gill-

membrane 7-rayed. Lower jaw longer, with small teeth. Tongue small, white, edged with a black membrane.

Dorsal fin one: 27 rays. Anal 25. Ventral very small: two bony anal processes. Pectoral fins curved downwards. Caudal fin forked, long. Upper one tipped with a black spot, black shaded, bluish green. Belly white with red. Black spot between the dorsal and caudal fin. Called Skip-Jack. Whole length 4—5 inches. They swim with the belly nearly level with the back.

Order Branchiostegous.

Ostracion. In addition to the Linnean (in Turton) description, has the mail composed of hexagonal bony pieces; spotted, and tubercled.

O. Trigonus. A variety? Body triangular, back circular: spines 2 affixed to the inferior angles, forward of the anal fin. Lips retractile. Dorsal and anal fin 10 rays, opposite*. Pectoral 12. Caudal 8.

BOTANY†.

DISEASES AND NATIVE REMEDIES.

Ascites appears to be particularly prevalent at Cape-Francois; more so, indeed, than I had ever seen it else-

* They are not opposite in *O. quadricornis*.

† The articles under this head will be given in the next number of the Journal. EDITOR.

where. One cause of the frequency of this disease was, by many, said to be fear, as the dropsy was observed to be more common among the Whites and Mulattoes *after the massacres*. Men and women were, I think, equally affected.

I saw two patients, labouring under this disease, nearly cured by large doses of gamboge, combined with calomel, &c. In the management of the dropsy, the blacks use the same remedies as for the suppression of the menses. These remedies I am to mention presently.

Obstructions of the catamenia are a very common complaint. It is frequently accompanied, I was told, with painful maxillary swellings: but, I believe, they never suppurate. That there was some connection between the uterine system and those swellings, I think probable, from observing them entirely confined to the females.—I shall not offer a conjecture as to the cause of this complaint; but it must not be attributed to decayed teeth.

For the purpose of removing obstructions, procuring abortion, &c., the indigene women employ a variety of articles; some of which, as they find them so frequently to succeed, are, no doubt, active medicines. Such appears to me the Paupionne, afterwards to be mentioned. It is a very favourite article, and in general use. The roots, which are intensely bitter, are infused in tasse, or country rum, and a table-spoonful of the saturated tincture is given twice a-day.

For the same purpose, they use a plant with tendrils and leaves somewhat similar to those of the *Cucumis sativa*. This is also given in worms. Likewise, a root termed *Leanconso*, which is said to induce salivation. They employ this in general dropsy.

With the same intention, they use the leaves of the *Laurus Persea*? the fruit of which is termed *Avoca*, and *Alligator-Pear*. It is given in an aqueous infusion. It is, no doubt, deserving of some attention. The stone of the fruit affords a milk, that stains linen, which water will not remove.

The unripe fruit of the *Achras Sapota* of Linnæus has the same effect on linen. The seeds of this *Achras*, bruised, and boiled in water, are used as a successful remedy in suppression of urine. I have known it used in one case.

Another root, termed *Zompara*, is used, in infusion, in suppression of the menses.

Hernia umbilicalis is a very common affection among the negro-children. In some instances, the external protuberance is very large. It was confined to the black children; and the females were, I think, exclusively affected.

In gonorrhœa, they use as a drink, and I believe with success, a watery infusion of a shrub, termed *Bois Savon*, or Soap-wood. It has a bitter taste. One end

of a stick, being meshed, is used as a brush for cleansing the teeth.

A plant, called by the inhabitants Ipecacuanha, is said to be a very efficacious emetic. Cattle eat, with impunity, the leaves, at some seasons.

For worms, in children, they take the fruit and leaves of the Papaw, which are pounded and boiled in water, and given to the child, as largely as its stomach will bear.

MISCELLANEOUS OBSERVATIONS.

I observe, in your *Medical and Physical Journal**, that Dr. Robertson has noticed a very singular and invariable change of colour, in the petals of our Cotton. This is a curious fact; and as, I believe, this change never takes place in Hispaniola, I think it worth noticing.

I have frequently dissected the flower of the Hayticotton, in every stage of its growth, and can confidently say, that in them no change took place: the petals were of various colours, such as red, white, and yellow, before they disclosed from the calyx. I do not recollect seeing flowers of different colours on the same tree.

The inner husk of the Zea Mays is used, I was told, for scouring or washing clothes.

* Part i. vol. 2. pages 172, 173.

With the bark of the Rhizophora Mangle, leather is tanned. It is not so firm as the American leather, and has a very red or dark colour.

I was told by Mr. Booth, a gentleman of correct information, that on a mountain, between Port au Prince and Jacquemel, the Dunghill-cock crows almost continually, even during the day; and also, from his own knowledge, that at the distance of about sixty miles, the same species is never heard to crow.

At Gonaives, the earth has, in many places, very pure salt (muriate of soda) deposited on the surface. All the earth has a saltish taste. Formerly, there were, at this place, numerous sugar-plantations: but it was found, that the sugar had a saltish taste, and, of course, the making of sugar here was given up. This fact, so well known, goes, I think, a great way to establish your idea, that some substances are carried *unchanged* into the vessels of the plant.

I am, &c.

A. GREGG, Junr.

Bristol, June 20th, 1806.

III. Remarks on the Management of the Scalped-Head.

By Mr. JAMES ROBERTSON, of Nashville, in the State of Tennessee. Communicated to the EDITOR, by FELIX ROBERTSON, M. D., of the same place.

IN the year 1777, there was a Doctor Vance, about the Long-Islands of Holsten, who was there attending

ing on the different garrisons, which were embodied on the then frontiers of Holsten, to guard the inhabitants against the degradations of the Cheerake-Indians. This Doctor Vance came from Augusta-County, in Virginia. In March of the same year, Frederick Calvit was badly wounded, and nearly the whole of his head skinned. Doctor Vance was sent for, and staid several days with him. The skull-bone was quite naked, and began to turn black in places, and, as Doctor Vance was about to leave Calvit, he directed me, as I was stationed in the same fort with him, to bore his skull as it got black, and he bored a few holes himself, to show the manner of doing it. I have found, that a flat pointed straight awl is the best instrument to bore with, as the skull is thick, and somewhat difficult to penetrate. When the awl is nearly through, the instrument should be borne more lightly upon. The time to quit boring is when a reddish fluid appears on the point of the awl. I bore, at first, about one inch apart, and, as the flesh appears to rise in those holes, I bore a number more between the first. The flesh will rise considerably above the skull, and sometimes raise a black scale from it, about the thickness of common writing paper. It is well to assist in getting off the scales of bone with the awl. These scales are often as large as a dollar, and sometimes even twice as large.

It will take, at least, two weeks from the time of boring for it to scale. When the scale is taken off at a proper time, all beneath it will appear flesh, like what we call proud-flesh, and as if there was no bone under it.

The awl may, at this time, and, indeed, for a considerable length of time, be forced through the flesh to the bone without the patient's feeling it; but after any part has united to that portion of the scalp, which has remaining original skin, it becomes immediately sensible to the touch.

The scalped-head cures very slowly, and if this kind of flesh rise, in places, higher than common, touch it with blue-stone water, dress it once or twice a-day, putting a coat of lint over it every time you dress it, with a narrow plaster of ointment.

It skins remarkably slow, generally taking two years to cure up.

In the year 1781, David Hood was shot, at this place, with several balls, and two scalps were taken off his head, and these took off nearly all the skin which had hair on it. I attended him, bored his skull, and removed from almost the whole of his head, such black scales as I have described above. It was three or four years before his head skinned over entirely; but he is now living, and is well.

In 1789, Richard Lancaster and Joel Staines were both wounded, scalped, and left for dead. These persons were under my directions, and their heads were bored as above described. They both got well, in the course of two years.

M. Baldwin, and some others, were scalped either in the year 1790, or 1791. Their sculls I also bored, or directed it to be done. They all recovered.

I never knew one that was scalped, and bored as above directed, that did not perfectly recover. There is always part of the scalped head over which but little or no hair afterwards grows.

In 1769, I saw a young man in South-Carolina, who had been scalped eight years before that time, and about twice the size of a dollar of the bone of his head was then perfectly bare, dry, and black. I am persuaded, that had his skull, even then, been bored, he might have recovered of the wound, which put an end to his life about a year after after I saw him; the naked portion of bone having rotted, or mortified, and exposed the substance of his brain, a very considerable quantity of which issued out at the opening, at his death.]

Nashville, April 10th, 1806.

IV. *Remarks on the Treatment of Strangulated Hernia.*

By JAMES LYONS, M. D., of Richmond, in Virginia; with a note by Dr. J. WORRAL. Communicated to the EDITOR, by Dr. LYONS.

ON Saturday, the 8th of December, 1805, a black lad, about 19 years of age, in unloading a waggon-load of wood, by throwing the logs backwards over his head, forced the ring of the abdominal muscle. He did

not feel much pain at the time, 10 o'clock, P. M., nor until night, when he was riding on horseback home. On the next day, Dr. Worrall, of this city, his master, having accidentally visited his farm, found him complaining very much of the Colic, and, on examination, discovered a scrotal hernia of considerable size. The doctor directly bled him to 10 ounces; applied warm fomentations to the tumour; had his hips elevated to favour the return of the prolapsed parts, and used his best endeavours to return them, without effect. In the evening, the doctor called on me to accompany him. We found the lad making great complaint, with some hardness, but without fulness, or much quickness of pulse.

A vein was opened directly, which having been done by a dim light, did not discharge more than five or six ounces, before the orifice closed. Several stimulating injections were administered, into some of which tobacco smoke was blown; they returned with fæces, but without any relief to the hernia. I also tried cold applications, which I had used with success, on a former occasion. In the first effort to reduce the hernia, after their application, a cracking was heard, as if wind had passed into the abdomen; but the sac, from the tightness about the ring, was so obstructed, that it could not be reduced. The cold produced so great pain, and such shiverings, that we were obliged to desist from its use.

As it was now late in the night, we thought it best to have him removed to town next day. This could not be done till late on Monday evening. He was now consi-

derably weakened, having eat little, and vomitted frequently, with hiccough ; pulse 90, small and hard.

Dr. M'Lane also attended, at the request of Dr. Worral, and it was determined to try copious bleeding. About 24 ounces were taken away, without producing that relaxation we expected, or any benefit in facilitating the reduction. Injections of tobacco smoke by a proper instrument, and the decoction, were repeatedly given, without other effect than distressing sickness and vomiting. He was put into the warm bath, and repeated attempts made to return the sac, without effect. The scrotal tumour was now extremely sore, and could not be touched without giving much pain.

On the 10th, he was considerably worse in every respect, with restlessness, almost constant hiccough, and vomiting. Having tried every remedy which either of us could suggest, his pulse getting feeble, and his situation alarming, it was agreed that nothing could afford a chance for recovery but an operation, which was performed between four and five o'clock.

Dr. M'Lane was requested to take the knife, who hesitated some time, under the apprehension that the patient could not survive. Considering death as certain without, and a chance of life by, the operation, we urged him to proceed. He began the incision just below the ring, and carried it down the tumour, about four inches, afterwards gradually divided the integuments by repeated strokes of the scalpel, till he laid the peritoneal sac quite bare ; then, introducing the forefinger of the left hand, as

a director, he enlarged the ring sufficiently to return the sac and its contents, without opening it. This was the only difficult part of the operation, as the sac, being much distended, some of it came back several times. A few stitches with a needle and thread were taken to close the integuments, and a compress and bandage applied over them.

There was no stricture at the ring, as is sometimes the case ; for Dr. M'Lane and myself got our fingers easily through, before the enlargement. The patient was instantly relieved, after the prolapsed parts were returned, and while he lay on the table, before the incision was sowed up, said, emptiness and hunger gave most pain.

He rested well that night. On the next day, there was a puffy swelling about the groin and scrotum, some tightness around the abdomen, which were removed by mild injections, and hardened faeces brought away. The edges of the wound separated but little, and a good suppuration succeeded, the inner parts adhering as was wished. He had a slight fever for two or three days, after which his appetite became greater than could be indulged, and before a week expired from the operation, he only complained of confinement to his bed. He returned, before the end of the month, to the farm, and was able to do service.

The success of this operation, under the most unfavourable circumstances, has induced me to report it, with the following queries to the gentlemen of the profession.

1st. Whether we are not too often deterred from performing the operation for the Strangulated Hernia, from the supposed difficulty and danger of it?

2d. Whether it is not the safest way of operating, to return the prolapsed sac without opening it, unless there are appearances which indicate gangrene, or some other circumstance should exist, to make it necessary?

I am satisfied, that many die from this complaint, who might be saved by a timely operation, which, most commonly, is owing to the objections which surgeons have to perform it; and I believe, both Dr. Worrall and Dr. M'Lane agree in opinion with me, that the life of the patient was in imminent danger, in this case, from the delay. I know that Mr. Bell, and many other eminent surgeons, have endeavoured very strongly to dissuade from returning the sac without opening; but, as I consider successful experience as the best guide, I have ventured to differ from them.

In confirmation of what I have proposed in the first query, I subjoin an extract from a publication by Mr. William Hey, of Leeds, in England, a surgeon of high repute, and much experience. Mr. Hey says, "When I first entered upon the profession of surgery, in the year 1759, the operation for the strangulated hernia had not been performed by any of the surgeons in Leeds. My seniors in the profession were very kind in affording me their assistance, or calling me into consultation when such cases occurred; but we considered the operation as the last resource, and as improper until the danger

appeared imminent. By this dilatory mode of practice, I lost three patients in five, upon whom the operation was performed. Having more experience of the urgency of the disease, I made it my custom, when called to a patient, who had laboured two or three days under the disease, to wait only about two hours, that I might try the effect of bleeding, if this evacuation was not forbidden by some peculiar circumstances of the case, and the tobacco clyster. In this mode of practice, I lost about two patients in nine, upon whom I operated. This comparison is drawn from cases nearly similar, leaving out of the account those cases, in which a gangrene of the intestine had taken place. I have now, at the time of writing this*, performed the operation thirty-five times, and have often had occasion to lament, that I had performed it too late, but never that I had performed it too soon. There are some cases so urgent, that it is not advisable to lose any time in the trial of means to produce a reduction."

Mr. Hey's Practical Observations on Surgery contain some excellent directions for opening the sac, when that is to be done, which, with a number of cases perspicuously detailed, well merit attention.

The annexed letter from Dr. Worrall will show, that the cure has been complete, and, I hope, will remain so.

Yours, &c.

JAS. LYONS.

* Published in 1803.

DEAR SIR,

I have attentively considered the case of Scrotal Hernia, which lately fell under our joint care. I find it most accurately stated throughout, except where you say the hernial or peritoneal sac was returned, with its contents, on the enlargement of the ring: it is true, the visceral contents of the sac immediately and easily receded; but it appeared to me, that an adhesion had taken place on the posterior part of the sac, and the ring near the pubes: for I observed, on every attempt to return, it never yielded in that part. However, it is a very consoling reflection, that the whole of the protruded peritoneum may remain in the scrotum without any material injury, or gangrene, following. I have, since the closing of the wound, examined the boy, and find the parts perfectly sound, and in a natural state, except a small enlargement on the groin, feeling like a cord, about the size of a small finger, and which I suppose to be the contracted peritoneal sac filling up the ring. This circumstance may probably be attended with considerable effect in preventing future descents through the ring, enlarged by the operation.

Yours, respectfully,

J. WORRALL.

Dr. Lyons.

V. *Account of the Last Illness of the ingenious Doctor William Stark (of London); with a Statement of the Appearances on the Dissection of his Body. From an original MS., by the late Mr. WILLIAM HEWSON, Surgeon and Anatomist, in London. Communicated to the EDITOR, by Dr. THOMAS HEWSON, of Philadelphia.*

ON Monday morning, February 8, he sent to desire me to come and bleed him. I went to him at 9 o'clock, and found him just going to take a glyster. He told me, he had a pain at the lower part of his abdomen, and had not made water in any quantity, nor had a stool, for three or four days. This he attributed to a change of his diet, from a pudding made of honey and flour, to cheese; which I understood he had eaten to the quantity of three or four pounds, without having had any evacuation since he began it; and this, he told me, was the opposite effect to what the honey had, for, whilst living on that, he had made more urine than he had drunk water!

Agreeable to his desire, I took away nine ounces of blood, which was received into four cups, the two first of which were afterwards found to have an inflammatory crust. This blood being examined at five o'clock in the afternoon, was found to have parted with very little serum, which I attributed to its having stood in a cool place, as the coagulum felt very firm, and one cup being removed into a warmer room, had more serum separated

by the day following. Soon after being bled, he took half a dram of castor-oil.

In the afternoon, when I saw him, he thought himself rather better, having discharged some fæces, which, he told me, were extremely offensive, and having made water. Upon inquiring whether he had been sensible of any enlargement of his bladder, I was answered in the negative, and that his obstruction in this evacuation was not complete, for he had frequently made a spoonful of water, and could, at any time, discharge a small quantity; which, as I mentioned to him, looked as if his want of a copious evacuation was owing rather to a want of secretion than to an obstruction in the neck of the bladder. He drank, during this day, plentifully of water-gruel, with a little juice of orange in it.

On Tuesday morning, I found that he had a very restless night. He told me, that he had been very hot, feverish, and very thirsty. He complained of a pain in his head. His face was remarkably florid, and he had spit blood in the night. He seemed much oppressed, and fetched his breath, every now and then, with a moan. His skin was very hot, and his pulse seemed to indicate a second bleeding, which he desired me to perform; but hearing that he had sent for Sir J. Pringle, who had promised to visit him that morning, I desired he would let me defer the operation till after his visit, and that I would return by 12 o'clock, to bleed him, if Sir John approved of it.

I returned according to promise, and was told, that Sir John had desired him to repeat his castor-oil, but had advised him not to be bled, for his pulse did not seem to require it.

Upon examining his pulse at this time, I was surprised to find it so much altered in so short a time, for it was now remarkable soft. I saw him again at 5 o'clock, and found him much oppressed. He moaned frequently; said that his stomach loathed every sort of watery liquor; had a violent pain in his head. He was very low spirited, and told me he should not be surprised, if he should die in the night. He took a vomit of emetic tartar, mixed with soluble tartar, at 7 o'clock. At 8 o'clock in the evening, when I visited him, he thought himself much relieved by it, though, on looking at the vessel, there was nothing discharged from his stomach, except a very little mucus. He told me, that the emetic tartar had begun to purge him.

On Wednesday morning, I found him very low, and spitting constantly. He told me, his saliva was sweet, and that he supposed his purging owing to his swallowing it in his sleep, for, when he spat out his saliva, seemed to purge less. The pain in his abdomen, he said, seemed not so low down as it was, but the pain in his head was the most severe and intolerable. He took, during this day, some chalk julep, with laudanum, after every stool. In the evening he told me, he was afraid to go to sleep, lest he should swallow his saliva.

On Thursday morning, I found that he had been delirious in the night ; had got out of his bed in spite of his nurse ; but had immediately tumbled down upon the floor. When I saw him, he muttered indistinctly, but seemed sensible of what I said to him ; gave me his hand to feel his pulse, on my requesting it.

At 2 o'clock in the afternoon, I found him evidently worse ; he was insensible ; his stools were discharged involuntarily, and very frequently, and, as the nurse told me, were merely discoloured water. He had now a blister applied ; had clysters of a decoction of bark ; some draughts, with oil of cinnamon ; but, from this time, grew worse and worse, and died on Friday afternoon, at four o'clock.

His corpse was examined by Mr. Hunter and myself, on Sunday, at 10 o'clock, and we observed as follows :

Upon opening the abdomen, two or three ounces of water were found in the pelvis. The bladder had about six ounces of water in it, of a natural colour. His small intestines appeared very red or inflamed at particular parts, which, on opening into their cavities, were found to be the glandulæ peyeri enlarged. One cluster of them seemed ulcerated. The glandulæ solitariæ were, some of them, of the size of a split pea. The mesenteric glands were much enlarged, and, when cut into, were found to be remarkably soft and tender. The stomach, near to its upper orifice, had the vessels of its villous coat full of blood. They broke down on a very slight pressure. His liver seemed rather small. The

spleen rather large. The kidneys had their veins rather fuller of blood than is common; but the ureter and the pelvis were of a natural size. The large intestines seemed quite sound. In the thorax there was more water than is found in people who die of violent deaths, even after lying two days. The same may be said of the pericardium. The lungs had several black spots in different parts of their substance, owing to extravasated blood. The heart seemed rather flaccid, and had no coagulum in it. The blood being fluid, one or two transparent coagula were afterwards observed in the vessels of the brain, but they were very soft. The dura mater had no morbid appearance. The vessels of the pia mater had more moisture in the cellular membrane contiguous to them than is natural. The ventricles had each about a tea-spoonful of water, and that in the left was of a bright yellow colour. The pineal gland had several earthy particles in it. The other parts of the brain had no preternatural appearance.

VI. *Case of a Child who swallowed an Iron Nail, which made its Way through the Intestines and Parietes of the Abdomen. Communicated to the EDITOR by Dr. JAMES LYONS.*

IN the night of the 2d instant, I was called to a child, not quite nine months old, which, although in good health, had cried, for two days, more than usual.

On examination, the mother discovered a hard, inflamed tumour, about half an inch from the umbilicus

42 *Case of a Child who swallowed an Iron Nail.*

on the left side, over which a poultice was applied. On removing the poultice, just before I visited the child, a small aperture had taken place in the middle of the tumour, and the point of a hard substance was visible. I could only at first feel, from its size and roughness, that it was not a needle, as had been supposed ; but, on the child's going to sleep, it projected sufficiently to show a part of a nail, which I held, and, by extending the opening, and dissecting down and around the head, extracted. It is a cut fourpenny nail, of a large size, almost an inch and a half long, a little bent.

The child is large for its age, and has enjoyed good health, nor has it suffered any other injury from the course of this nail than a small sore, which is now nearly healed.

This nail must have been taken by the mouth, and swallowed head foremost, probably at the time of cutting its teeth, of which it has four, at which period children are known to be fond of carrying hard substances to their mouth, and its discharge seems fortunately to have been directed to a part of the body least liable to be injured by it.

I have been informed, by a physician of undoubted veracity, that he extracted a needle from a lady's arm, which she recollects to have swallowed many months before, but I have never heard of any thing so large as this nail travelling a similar course in the human body, with so little injury to it.

JAS. LYONS.

Richmond, January 16th, 1806.

VII. *Observations relative to the Geography, Natural History, &c., of the Country along the Red-River, in Louisiana. In a letter to the EDITOR, from Mr. PETER CUSTIS, of Accomac-County, in Virginia.*

DEAR SIR,

THE boats not being in readiness on our arrival at Natchez, we had to proceed to New-Orleans, for the purpose of fitting them out, and from thence to return to Natchez, for the final equipment of all which, much time was necessarily required.

On the 1st of May, we entered the mouth of the Red-River, which is sixty miles below Natchez, and arrived here on the 19th. This river, at its mouth, is about half a mile wide, and preserves that width for only one mile, after which it is contracted to about the fourth of a mile, and continues of that breadth to near the mouth of Black-River, a distance of thirty miles from the Mississippi. At the mouth of Black-River, it is 350 yards wide, and contracts, almost suddenly, to 250 yards, and then continues gradually to become narrower as we approach the Avoyelles-Settlement, 35 miles higher, where it is only 115 yards.

The whole country to this place, is annually inundated, and after passing Black-River is covered with a reddish-brown argillaceous marl, which is capable of suspension in water, and imparts its colour to the waters of this river (the Red-River), from which circumstance it has taken its name. In some places, this marl ex-

tends to the depth of four or five feet. At the Avoyelles-Settlement, the banks are about 30 or 35 feet above the level of the river, and are, alternately, higher and lower, to the Rapide-Settlement, 50 miles above.

Every spot on the river, not subject to overflow, is inhabited. Twenty-three miles above the Rapide, or Falls, is an Indian village, called the Appalaches, on the right side of the river, on a beautiful and high bluff. This bluff is 50 feet in height. Eight miles above this, are the Pasquegoulas-Indians, inhabiting both banks. They appear to be a peaceable, industrious, and friendly people. Seven miles above the Pasquegoulas, the river divides into two branches; that to the right is very narrow, and rendered impassable by rafts, and retains the name of Red-River, but is better known to the inhabitants by the name of *La Riviere de Petit Bon Dieu*, from the circumstance of a priest having been upset here, and losing his ~~IMAGES~~: that to the left is about 80 yards wide, and is called the Cane-River, because of the Cane (*Arundo Donax*) being in greater abundance on its banks than on those of the other River.

There is on the Cane-River a great abundance of excellent sand-stone, for building. This river runs twenty miles, and divides. The branch to the right is 50 yards wide at its mouth, and is called Little-River. The left branch retains the name of Cane-River, and is the more direct way to Nachitoches, but, like the Bon Dieu, is impassable. The Cane and Little-Rivers unite at the distance of half a mile below Nachitoches.

Nachitoches is 47 miles above the mouth of Little-River, and 220 miles above the mouth of Red-River. It is situated on the left side of the river, 18 feet above the present level, and almost surrounded by high hills composed entirely of lime, clay, and sand, intermixed. The lime predominates, and is found to extend 30 feet below the surface. I have seen masses of the carbonate, which were dug out of the earth, eight feet below the surface, with pieces of shells inhering.

The soil of this country is mostly clayey, intermixed with the marl before mentioned, and appears not worth cultivating, but is actually the best cotton-land in the world. The land here is far more productive than the best Mississippi-lands, and the cotton always commands a higher price.

The trees of this country are nearly the same that are found on the Mississippi. The *Liriodendron Tulipifera*, *Magnolia grandiflora*, and *Tilia americana*, which are abundant on the other side of the Mississippi, in the Mississippi-Territory, and West-Florida, I have never seen on this side. The Pecan (*Juglans petiolata**, as I have called it) is every where abundant on this river. The Cotton-tree is plentiful. Different species of Oaks (*Quercus rubra*, *Q. Phellos*, *Q. nigra*, &c.), Iron wood (*Syderoxylon mitc*), Hagberry (*Prunus Padus*), *Diospyros virginiana*, *Gleditsia triacanthos*, *Platanus occidentalis*, *Juglans alba* and *J. nigra*, *Pinus sylvestris* are on

* I have called it *J. petiolata*, because of the leaves having an odd leaflet petiolate. It is by this, we distinguish it from the *Juglans alba*.

all the high lands : *Morus nigra*, *Liquidamber styraciiflua*, *Acer pennsylvanicum*, *A. saccharum*. Of these I saw a few on Cane-River ; *Laurus Sassafras*, and *Annona glabra*, *Laurus Benzoin* and *Æsculus parviflora* of Walter, are common ; also, the *Myrica cerifera*.

The *Fagus pumila*, or Chinquepin, I had almost omitted. This is very abundant, and grows to a very great size. I have seen them, at Rapide, thirty feet high, and seven feet in circumference ; and was told, that there were some much larger.

There is a shrub, on this river, that grows from ten to twenty feet high, and bears a drupe somewhat like the olive, but not so large. It is, when ripe, of a reddish-purple colour. The *putamen* is of a woody fibrous structure : the fibres are easily separated by the fingers. The same peduncle supports from ten to fifteen drupes. The peduncles are numerous and subopposite. Its leaves are elliptic. Probably, it may be the *Elaeagnus* of Linnæus.

The banks of this river are, in most places, covered, from low to high water mark, with the *Mimosa punctata*. At Rapide, I saw the *Erythrina herbacea* in flower.



The Alligators are very abundant, and of very large size. The largest I have had an opportunity of measuring, was twelve feet long.

The Fish are the following, viz. *Silurus Catus*, which are very large. I have seen one caught, at this place, that measured $3\frac{1}{2}$ feet in length, and 7 inches between the eyes: the Gar-fish (*Esox osseus*), Buffaloe and Alligator-fish. The latter, I am told, has been seen, in this river, 15 feet long: Herring (*Clupea Thrissa*), and Perch (*Perca ocellata*).

The *Testudo ferox* is very abundant at this place. I have seen one caught by the men, which measured 18 inches in length, and 15 in breadth. They are a very great delicacy.

* * * *

There is a Squirrel, in this country, not described by Linnæus. Its body and the upper part of the tail are dark grey: the belly, inside of the legs and thighs, and under part of the tail, are of a reddish brown: ears not bearded. Tail longer than the body, and very broad. About the size of the *Sciurus vulpinus*. I have called it *Sciurus Ludovicianus*, until we know if it be a new species.

The *Tetrao virginianus* is abundant here.

To-morrow morning we leave this, with 7 boats, 40 men, three commissioned, and four non-commissioned officers.

* * * *

Enclosed, you will receive a set of Meteorological observations; also, an account of the distances to all the notable places between this and the source of the Red-River, as given by Indian traders and hunters. You are at liberty to make what use you please of them.

* * * *

I am, Dear Sir, with sentiments of true respect and gratitude, your sincere and ever-devoted Friend and Pupil,

PETER CUSTIS.

*Natchitoches, Louisiana, June 1st,
1806.*



The distance from Natchitoches to the source of the Red-River, according to the accounts of the best and most respectable hunters and traders. The distances have been curtailed in consequence of the Indian traders and hunters being apt to overrate them.

		Miles.
1	To Grand Ecore	10
2	Campté	20
3	Bayou Chanuo	15
4	Through do. into Lake Bristino	3
5	Through Lake Bristino to the upper end of do.	60
6	Through Bayou Dochette to Red-Ri- ver again	9

7	To Conchetta villages (where the Cadoux lived, 9 years ago)	60
		— 177
8	First Little-River, south side	80
9	Long Prairie, north side	25
10	Upper end of do.	5
11	Little Prairie, south side	40
12	Upper end of do.	25
13	Pine Bluff, north side	12
14	Upper end of do.	5
15	The Cedars	15
16	Upper end of Cedars, and mouth of Little-River, north side	40
		— 247
17	Round Prairie, north side, and first fording place	20
18	Lower end of Long Prairie, south side	25
19	Upper end of do.	40
20	Next Prairie, south side	12
21	Upper end of do.	20
22	Three mile Oak and Pine Bluff	30
23	Pecan grove	9
		— 156
24	Upper end of do.	6
25	Next Prairie above the Pecans	40
26	Upper end of do.	25
27	Pine Bluff, south side	45
28	White Rock Bluff	15
29	Next Prairie, north side	45
30	Upper end of do.	30
31	Bayou Gatte, north side	6

50 *On the Geography and Natural History, &c.*

32	To Kiomitchie, or Riviere la Mine	25
		— 237
33	Pine Bluff, south side	25
34	Bois d'arc, or Bayou Kick, south side*	40
35	The Nazure, or Boggy-River, north side	8
36	Blue-River, same side	50
37	Faux Anachitta, or Little Missouri, same side	25
38	Panis Villages	60
39	White Rock (old Panis Towns)	120
40	From thence, as you ascend, the river divides into many branches, and to the source is estimated at	300
		— 628

After curtailing one third, the whole distance is 1445

VIII. *Notices of the Weather and Diseases at Londonderry, in Ireland. In a Letter from WILLIAM PATTERSON, M. D., Physician at Londonderry, to the EDITOR.*

THE winter, 1805—6, was what is here termed an open winter, not having long frosts, nor deep snows; the weather was wet and blustery, with one tempestuous gale on the 9th of January; and there was frequent hail. Being abroad in the depth of winter, the thermometer

* Ancient village, or old fort, 20 miles from whence is a salt spring, on Little-River.

REMARKS.

May.	Late.	6, A. M.	3,	
		In air.	In river.	In air.
2		71	72	8 st of the day clear, with a gentle breeze.
3		72	74	8 th The remainder of the day clear, with a light breeze.
4		74	76	8 th
5	31.16	70	77	8 th afternoon, clear. A strong breeze all day.
6		76	78	8 th y, with a little rain in the forenoon; wind very fresh.
7		72	78	8 th
8		76	78	8 th
9		62	78	
10	31.20	50	78	8 th the night, rain, with thunder and lightning.
11		62	77	8 th ended with heavy thunder and lightning, and very
12		72	78	7 th
13		73	76	7 th afternoon, rain, with heavy thunder and lightning. -storm.
14		72	75	8 th der and lightning.
15		76	76	7 th over in the afternoon.
16		69	73	7 th hting.
17		67	73	6 th
18		64	73	7 th
19	31.46	65	73	8 th
20		72	73	9 th under and lightning. The rest of the day clear.
21		70	75	9 th The rest cloudy, with thunder.
22		71	77	8 th evening.
23		74	80	8 th on, a heavy shower, with thunder and lightning.
24		69	80	8 th
25		73	82	8 th on, cloudy. In the night, rainy.
26		72	82	7 th
27		69	80	7 th
28		69	79	7 th under and lightning.
29		72	79	8 th under and lightning.
30		80	78	8 th der and lightning.
31		74	78	8 th ay.

To face page 50.

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METEOROLOGICAL OBSERVATIONS,

Made on Red-River, in the Year 1806.

Alt.	Date.	Wind.						REMARKS.
		6, A. M.	12, P. M.	6, P. M.	In foren.	In air.	In river.	
8	1	71	72	85	76	78	76	S.
14	2	72	74	85	76	77	76	Variable.
20	3	74	76	84	77	78	77	S. L. & S.
26	4	70	77	83	76	77	77	S. & W.
32	5	76	78	82	79	71	78	S.
38	6	72	78	82	79	74	78	S.
44	7	76	79	83	80	76	78	W.
50	8	62	78	76	69	60	78	Variable.
56	9	60	78	80	73	65	78	E.
62	10	62	77	81	73	75	77	E. & S. E.
68	11	62	78	73	77	76	76	L. N. E.
74	12	72	78	73	77	68	76	L. N. E.
80	13	73	76	76	77	74	77	N. N. E.
86	14	72	75	83	86	77	76	W.
92	15	76	76	70	76	69	73	W. N. W.
98	16	61	72	74	78	72	74	S.
104	17	67	73	65	75	68	71	N. E.
110	18	64	73	73	75	70	71	S. W.
116	19	63	73	81	74	78	74	N. N. E.
122	20	72	73	90	70	76	76	N. W.
128	21	70	75	90	77	71	77	W. N. W.
134	22	71	77	68	79	78	79	S. E.
140	23	73	80	88	80	72	80	S. & N.
146	24	68	80	86	82	76	82	N. L.
152	25	73	82	84	82	76	82	N. E.
158	26	72	82	72	82	70	80	N. L.
164	27	69	80	76	80	72	79	L. N. E.
170	28	69	79	79	79	74	79	Variable.
176	29	72	78	83	80	78	79	S.
182	30	80	76	87	83	71	79	S. & N. W.
188	31	74	74	84	86	71	73	S.

To face page 50.

was not as accurately inspected as it ought to be, and therefore the instrumental temperature of the air cannot be deemed a perfectly just measure of it. The thermometer was observed no lower than $28^{\circ} 50'$, which, at best, must be allowed to be only an approximation to the truth. The quantity of rain, during the three winter months, was considerable, being no less than 13.318299 inches.

What has already passed of the spring has been cold and dry; only 0.998354 parts of an inch of rain fell in March; and April promises to yield still less. Near the middle of March, the thermometer dropt so low as $31^{\circ} 50'$; and near the end, the temperature of the air was genially warm. The 13th and 14th of April, there was some flakey snow, which soon dissipated; on the 14th, at 6, A. M., the thermometer, in the shade, was 35° .

In the beginning of March, some old people, from 60 years upwards, were carried off, partly owing to exhausted constitutions, and partly owing to the influence of the weather. One gentleman, aged eighty-two, fell a victim, in the space of a week, to frequent and inordinate paroxysms of intermittent fever, which he brought on by sitting a whole day in damp clothes.

In the beginning of April appeared an irritative fever, which is now so general as to be commonly called an influenza; but it is not of that description, the organs of respiration not being fundamentally engaged. It begins with some symptoms of pyrexia, viz., chilliness, headache, impaired appetite, thirst, and diminution of

strength; and, in young subjects, it is attended with vomiting; in some also with diarrhoea. The head-ache is the most irksome and tedious symptom, and compels the patient to keep his bed a day or two. In several cases, a soreness occurs in the throat; in some, a cough takes place at the beginning; in others, it does not appear, or, at least, in a slight degree, till the decline of the febrile state. Children, on the diminution of the pyrexia, take a running from the nose. The duration of the complaint, until the appearance of convalescence, is from three days to a week.

Except in the cases of children, medical aid is rarely sought; and, in these cases, the principal curative measures are the administration of citrate of potash, acetate of ammonia, calomel laxatives, and the antiphlogistic regimen. In one case of an adult, belonging to the upper class, where there was a hæmorrhagic effort from the fauces, it was found necessary to employ both venesection and vesicatorys. I heard of another case, that of a mechanic, who discharged some large spoonfuls of blood from the throat, and who recovered without the aid of medicine.

Accept, &c.

W.M. PATTERSON.

Derry, April 17th,

1806.

**IX. Notice of the Progress of Vaccination in Ireland.
In a Letter from Dr. PATTERSON to the EDITOR.**

VACCINATION, although gaining ground in this part of Ireland, is not as general as it ought to be, owing partly to prejudice, and partly to the want of an institution for keeping up a stock of vaccine matter. Shortly after I introduced the practice here, in April, 1801, I attempted to establish a public institution for this purpose; but I was unluckily defeated by the machinations of the ignorant, the prejudiced, and the selfish descriptions of the community. However, it is practised in that degree, in this city (Derry), that it has rebuked the former prevalence of the small-pox amongst us, and of course lessened their mortality when they do appear, which is now rather partially. But in the surrounding country, where inoculation of either kinds is not sufficiently cultivated, the small-pox has been, since this time twelvemonth, very predominant, often severe, and sometimes fatal.

Notwithstanding the generally slow advance of vaccination in Ireland, the reports of certain public associations, namely, that the practice has not been embraced, in this country, with the zeal which its character merits, is quite too general a charge. For, in some districts, even country gentlemen have, with presumed success, inoculated numbers of children, who were brought in groupes to their country-seats for that purpose; and, in some parts of Ireland, the practice was adopted, by medical practitioners, somewhat earlier than I introduced it into Derry.

If it have not spread in Ireland with the rapidity it has done in other countries, we may in future have reason to congratulate ourselves on the slowness of its progress; whence, according to the proverb, may result its sureness. I am persuaded, that, on this occasion, *festina lente* is an excellent maxim. I am apprehensive, that the enthusiastic rapidity pursued in some countries, where thousands and tens of thousands are inoculated with a sort of magical slight, will eventually injure its repute. The fact is, that the failures which have happened in England, and which have excited so much scurrilous and unphilosophical disputation, are evidently imputable in a great measure to this very cause. The cause of vaccination is also injured by the quires of unintelligible jargon on the subject, which are daily issuing from the teeming presses in our sister island. * * *

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W.M. PATTERSON.

Derry, April 17th,
1806.

X. *Remarks on a Passage in the Chemical Writings of the celebrated Scheele. In a Letter from ADAM SEYBERT, M. D., of Philadelphia, to the EDITOR.*

SIR,

IF you conceive the following trifle worthy a place in your *Journal*, you are welcome to make use of it. I do not attach any importance to it, other than its putting chemists upon their guard, in admitting *implicitly* the experiments related by authors of the first re-

spectability, as experimenters. The authority of Scheele scarcely admits of a doubt, and his statements of chemical facts and experiments have always been received without hesitation. If errors are committed by men of his eminence, surely, we should be very cautious in receiving, as undeniable, the many discoveries stated by the numerous authors of the present time.

Scheele wished to ascertain, “ whether heat alone would produce air from sulphur ? ” For this purpose, he “ put a piece of sulphur in a retort, with a bladder tied to it, and kept the sulphur strongly boiling during the space of half an hour*.”

Our author then says, “ The air in the retort was neither *increased* nor *diminished*, and was changed into foul air.” Scheele’s Chemical Observations and Experiments on Air and Fire. Kirwan’s edition, p. 188.

I suspected the accuracy of the above experiment, because, 1st, I knew that sulphur could be readily *oxidized* in a low temperature. And, 2dly, because it is stated, that the air in the retort suffered no change as regards its bulk, at the same time that it is asserted to have been changed into “ *foul air*. ” It is well known, that Scheele designates *azotic gas* by the term of “ *foul air*. ” This, certainly, could not have been the result of his experiment, unless an absorption of the oxygenous portion of the atmospheric air contained in the retort had previously taken place.

* It is proper to remark, that, with the sulphur, atmospheric air was confined in the retort.

There is no mis-statement by the translator, for the experiment is precisely the same in the English and French versions. To convince myself of the truth of my suspicions, I determined to repeat the experiment.

A quantity of the flowers of sulphur was put into a Florence flask, containing atmospheric air: a double fold of bladder was well secured over the mouth of the flask. The vessel was then exposed, in a sand bath, to a temperature sufficient to melt the sulphur, and it was kept in this situation for fifteen minutes. When cool, the flask was inverted over water, and as soon as the bladder was perforated, the water rose to a considerable height: hence an evident diminution of the bulk of the air, which was originally contained in the flask.

The above experiment was repeated, and, by an accurate calculation, the air suffered a diminution of one-fourth of its bulk. The residuum proved to be *azotic gas.*

Yours, &c.,

ADAM SEYBERT.

XI. *History of a Case of Scurvy, which occurred during the Use of Vegetable Food.* By CASPAR WISTAR, M. D., Adjunct Professor of Anatomy and Midwifery in the University of Pennsylvania: and by him communicated to the EDITOR.

THE subject of this disease was a young lady, of a delicate habit, who had been a long time afflicted

with diarrhoea, and therefore avoided the use of fresh vegetables with great care, confining herself to rice, chocolate, wheat bread, and butter, with a small quantity of fresh meat. She lived in this way several years, and was free from every scorbutic appearance. But, in the spring, 1801, she removed from Philadelphia, into the country, and then reduced greatly the quantity of her animal food, taking, about three times a week, a very small portion of salt meat, or an egg, while, in other respects, her diet continued as before, except that she used more chocolate, substituting it for animal food at dinner. Upon this aliment she lived a year, without any visible bad effect from it, but a change of her complexion, which became, gradually, very sallow. During this time, she was very sedentary; went seldom into the open air; and kept her apartments very warm.

In February, 1802, she engaged in attending a sick friend, who could not bear a fire in the chimney, or a window closed. She was therefore exposed, the greatest part of her time, to the open air, when it was very cold and damp, her diet continuing as before.

After eight or ten weeks had passed in this way, I was requested to visit her, on account of a swelling and discolouration of the lower extremities. She assured me, the change of colour, or ecchymosis, was occasioned by a fall, and described her sensations so much like those of rheumatism, that, for a few days, I believed her complaint to be of that nature; but, finding that the remedies for rheumatism gave no relief, I made a more accurate examination of the case, and discovered that

the gums were much swelled, and very livid. This symptom, added to the appearance of the limbs, satisfied me, that my patient had the scurvy. I therefore directed her to take four lemons every day, and to eat freely of boiled green vegetables, with animal food, for dinner. She complied strictly with the prescription, and it had the desired effect, most completely; for, in ten or twelve days, every symptom disappeared. The improvement in her complexion was so striking, that all the family remarked it, although they had not been sensible of the increase of the sallow colour. She also continued free from diarrhoea for a long time, notwithstanding this great change in her diet.

May it not be inferred, that, in the above instance, scurvy occurred when there could be no vitiation of the fluids induced by animal food, and also, when there was no reason to suspect a want of nourishment? for she used freely rice, chocolate, and bread with butter.

Is it not also evident, that the disease could not have proceeded from a deficient oxygenation of the blood, as the patient lived almost in the open air, when the disease appeared?

Must we not accede to the opinion, that scurvy is owing to a deficiency in diet, of recent vegetable matter*, or perhaps of the juices of vegetables? This opinion seems confirmed by the fact, that scurvy has been cured by a diet of raw potatoes in some persons, who had

* See the *Medicina Nautica* of Dr. Trotter; and also an interesting Essay, by Bachstrom, in Lind's Treatise on Scurvy, p. 402.

used the same vegetable boiled without any advantage.

The late appearance of scurvy in the jail of Philadelphia appears also to favour this opinion. The prisoners had lived between three and four months upon rye bread, with molasses and water, for breakfast; fresh meat, with dried pease and beans, or a soup made of these ingredients, for dinner; and Indian mush*, with molasses and water, for supper. By the end of this period, a large number of them were scorbutic, and did not recover until they had used a considerable quantity of lemon-juice as medicine, and had eaten fresh vegetables, very freely, for ten or twelve days.

XII. *Account of a Remarkable Tumour of the Face.*
Communicated, in a Letter to the EDITOR, from Dr.
JOHN A. CASEY, of Georgia.

BEING at Cambridge, in South-Carolina, some time since, I heard a description of an extraordinary Wen. The account was so uncommon, that I determined to visit the person, the subject of it. She is a black wench, 24 years old, quite corpulent, born of healthy parents, and of a numerous family of children, who are well-looking negroes, and none similarly affected with herself.

At the birth of this girl, there was a small tumour over the left eye, inclining rather towards the temple.

* Made by boiling the flour of Maize in water.

At the age of 11, the tumour had considerably increased, and the base had extended over the left ear, which now became very painful. From this time the ears began gradually to be drawn down.

At the age of 15, the eye became the seat of pain, and for two years kept the girl in exquisite torture, so much so, that her master was frequently forced to give her laudanum. The ball began to protrude from the socket, and, gradually travelling down the cheek, occupied, when I saw her (18 months ago), and had formed a sort of socket below the os malæ, extending obliquely towards the ear. The inner canthus commenced at the ala nasi, and reached to the bottom of the maxilla inferior, presenting, I can assure you, a spectacle horrid indeed.

As neither reading, observation, or report had ever suggested so uncommon a distortio naturæ, without a destruction of the parts concerned, I was induced to examine particularly this subject, and herewith send you a correct description of this wen.

It begins at the frontal sinus on the left side, and, embracing completely the ear, extends down to the inside of the shoulder, and thence pulling down the mouth to one side, takes in half the nose, and meets at the sinus.

The fundus, or base, 20 inches in circumference.

The length, reaching down on the thigh, 24 inches.

From the natural seat of the ear, to where it now occupies, below the shoulder, 9 inches.

Where the eye-ball now forms a socket, 4 inches.

The bag terminates in a point which will easily stretch to 14 inches. The maxilla inferior is divided at the chin, and the teeth are all inclined down the course of the wen. For seven years, her master told me, the passing down of the ear, and afterwards of the eye, were perceptible ; that the pain, when the eyeball left the socket, was insufferable ; but that, in its progress to its now situation, she complained but little.

But, Sir, what astonished me most was, the ball was not increased, nor was vision impaired ; the lids retained their power of winking, nor did her eye now give pain.

She could clearly hear a whisper. The external parts of the ear were very much enlarged, and presented more the association of the labia pudendi, &c., than the parts of the ear. This immense sack was suspended by six or eight cords as large as the umbilical, and which presented exactly the same sensations on feeling them. The pulsations were evident. I could discover but one artery.

Will not this case throw some light on nervous sensibility, or irritability ? Does it not declare, that the expansive power of the nerves is far greater than was ever known ? That so exquisitely delicate an organ as the optic nerve should be elongated to 4 inches from the

lower edge of the orbit, that is, more than 5 inches longer than its fellow on the right side; that at each motion of the ball, instead of that loose bed of fat it was wont to play in, it should be moved over the sharp edge of the upper part of the os malæ, and yet not impair its powers: that such should be the case is certainly (at least to me) a phenomenon. The auditory nerve, too, is stretched out 9 inches, and yet she can hear a whisper. Here the external parts of the ear partake of the general increase, and are larger than you will suppose.

There is, in this subject, a general disposition to excrecence. All over her body are carbuncular appearances, and two of them on the back large; one the size of a goose-egg, the other less. In general, they are the size of a pea or bean.

Does not this case show considerable analogy between vegetable and animal life? This always associates to me the Oak, particularly the species called Black-Jack, in which these —————— appearances are common. If your reading and observation have furnished you with a similar *lusus*, I should be glad to know it. If the account is new, and it is worth communicating, you can use it as you please. The account is not exaggerated. There was a Dr. Moore, and two or three others, who were present when the dimensions were taken.

Adieu.

JOHN A. CASEY.

Washington, Wilkes-County, Georgia,

July 1st, 1806.

**XIII. Some Account of a large Species of Ascaris, found
in the abdominal cavity of a Dog. In a Letter to
the EDITOR, from the late SAMUEL COOPER, M. D.,
of Philadelphia.**

SIR,

I TAKE the liberty of troubling you with some account of the dog that contained the Worm, to which you were so obliging as to pay some attention.

While I was engaged in making some experiments with stramonium on dogs, I happened to meet with one that appeared old; that had periodical twitchings or convulsions over the whole body; a frame much emaciated, and a very heavy appearance. These twitchings or convulsions occurred every three or four minutes. To this dog I gave a scruple of the extract of the leaves, which I repeated several times. The effect of the medicine was to produce frequent black stools, and a frequent flow of darkish urine, without a loss of appetite, with increased thirst, and with languor and emaciation of body. But, during this time, his convulsions did not abate.

I now remitted the medicine, without making any change in the diet of the animal. He became fatter and sprightlier; more so, I think, than I had hitherto seen him. But, upon repeating it in larger doses, the same phenomena as before were renewed, with greater violence. His breathing became laborious, and death, at length, ensued.

Upon opening his abdomen, I found the worm partly concealed by the liver, its ends concealed by the intestines, while the rest of it lay naked to the view ! I was much astonished, and much delighted, at this unexpected sight ; and at once concluded, that I had discovered the cause of the dog's convulsions. The worm possessed a crimson colour, and was dead. It might have existed in the cavity of the abdomen some time ; which is probable, as no perforation through the intestines could be found. The intestines were much distended with liquids, and, if it had made a recent passage, a portion of these liquids might have run into the abdominal cavity. But no liquids appeared there. Might not the worm have changed its abode after the first exhibition of the medicine, since it is offensive to similar worms, according to Dr. Rush and Dr. Fowler ?

The morbid appearances, upon dissection, were the following. The intestines and stomach were reddened, more externally than internally ; gangrene had formed in some parts of the intestines, and extensively in the mesentery ; the intestines were full of liquids, as already mentioned, yellowish, blended with the medicine. The brain seemed watery ; water was in the ventricles, or what resembled water.

If I am not deceived, this worm is a variety of the *Ascaris vermicularis* of Linnæus. But to determine its genus and species, I leave to you. Your accurate and extensive knowledge, in the science of Natural History,

will enable you to give it a just definition, and a proper place among the Vermes.

I am, &c.,

SAMUEL COOPER.

Pennsylvania-Hospital, March 28th,

1797.

XIV. *History of a Case of Rheumatism alternating with a troublesome Affection of the Skin. Communicated to the EDITOR, by Dr. AMOS GREGG, Junr.*

DEAR SIR,

IN compliance with your request, I send you the history of a case of Rheumatism alternating with a troublesome affection of the skin, which occurred under the joint care of my Preceptor and myself.

The patient, Isaiah M., a man of rather spare habit, and about 40 years of age, had been subject to rheumatism of the chronic form, for more than 15 years. This duration of disease had emaciated him very much, and produced an enlargement and stiffness of the joints, which rendered walking painful and difficult, and often impossible.

He was in this situation in March, 1804, when the cuticular eruption appeared on his legs. This eruption, which was Herpes Pustulosus, gradually extended itself over nearly the whole surface of the body, and, for six or eight weeks, entirely suspended the rheumatic form of disease. The herpes first appeared in small, red pim-

ples, containing a watery fluid, which, in a day or two, filled with a yellow matter, and, uniting with other pustules, would frequently be an inch in diameter, and containing more than a tea-spoonful of pus. They were attended with an intolerable *pruritus*, and finally fell off in the shape of dry, branny scales.

But this new minister of affliction, although it had assumed, and afterwards continued, in point of duration and distress, was not to retain the ascendancy altogether: and the herpes, which, in its access and decline, had lasted three weeks, was now to be succeeded, again, by the rheumatic state of disease, such as pain and swelling in the feet, knees, and elbows; and a chronic ophthalmia, to which he had been subject, was now only troublesome. The skin, all this while, kept pretty clear from eruption, but retained a red appearance. This form of the disorder rarely lasted longer than one week, when the eruptive form was ushered in anew. An alternation of symptoms being once established, though unequal as to duration, was kept up with remarkable uniformity: so much so, that the patient, without recollecting the time of attack, could tell, by observing the declension of swelling, or pustular eruption, frequently to a day, when the next form was to appear. The bowels, during the first stage, were rather constipated, but, for the last few months of his life, he had a distressing diarrhoea, which arose and declined with the rheumatic form.

His appetite, during the whole course of the conflict, was tolerably good. Neither did foul tongue, thirst,

&c., ever indicate much gastric disorder. A few times only, he had nausea, which was of temporary existence.

Pain, as might be naturally expected, was frequently excruciating. The bowels, eyes, skin, and joints, all suffered. And although he had fever, pretty constantly, I do not recollect, that the grade of arterial action was materially different. The pulse was, I think, generally small, hard, and frequent. His sleep, unless when under the influence of opium, was generally disturbed. In fact, he frequently passed a sleepless night without it, when there was no apparent cause.

The treatment which was adopted, can, probably, throw no new light upon the curative means most likely to succeed in such complicated affections in future, as he eventually died, after it had continued eighteen months. Indeed, no one steady system of practice was pursued, but new applications were had recourse to, as the disease varied, or as the former remedies failed of producing any apparent advantage. And it pursued its course with such steady uniformity, and uncontrouled in its power, as seemed to elude every art to arrest its progress.

I said that the treatment varied. It was, indeed, often opposite in its intentions. The diet was sometimes a spare vegetable one, and, at other times, a full meat-diet was allowed.—The remedies were internal and external: such as, small bleedings, cathartics, calomel (so as to affect the gums), opium, absorbents (such as aqua calcis, carbonate of magnesia); tonics,

saturated solution of arsenic, sulphuric acid, cinchona, gentian, &c. To the skin were applied sulphate of zinc, acetate of lead, unguent. vel. linament. calcis, made by uniting aqua calcis to ol. lini ; sulphur-ointment, &c.

These and various others were used, with very little benefit ; or, perhaps, I should say, with none at all. If any application was of service, it was burdock-leaves wilted and applied to the ulcers, when they were drying ; but the relief was only temporary. I prescribed the unguentum calcis, with sanguine hopes, as I had seen it used, with undoubted advantage, in scrophulous ulcers, and in burns. In the last, it exceeds every thing I ever saw used. It would have afforded me more satisfaction, if the termination had been in health : but, at all events, the case is a curious one.

I am, &c., &c.,

AMOS GREGG, Jun.

Bristol, August 10th, 1806.

P. S. My preceptor, Dr. Gregg, who attended the patient under the rheumatism, observed to me, that the issues, which were put in, and had discharged profusely, ceased to afford matter on the appearance of the pustular eruption ; nor could they afterwards be made to run.

XV. *Sketch of the Medical Topography of the Military Tract of the State of New-York. In a Letter from Dr. JOHN H. FRISBRE, of Camillus, to DAVID HOSACK, M. D., of New-York. Communicated to the EDITOR, through the hands of Dr. WILLIAM CURRIE, of Philadelphia, by Dr. HOSACK.*

SIR,

YOUR letter of the 10th of September was received on the 4th of October. Professional and other business, of the first necessity, prevented me from answering it until now. I shall comply with your request, with the utmost cheerfulness.

Query 1st. " How long have you practised physic in the country where you now reside ? "

Query 2d. " What are the general features of the country in which you practise ? "

Answer. I became a resident of this place in May, 1797. For the first two years, my practice was pretty much confined to the limits of this town. Since that period, my business, particularly in surgery, has been extending into the neighbouring towns, so that to describe the face of the country in which I practise will be to describe the face of the whole of the Military Tract.

This country, with a few exceptions, may be called level. There are, indeed, in it some hills ; but few, if any, of them exceed three hundred feet in height from

the surface of our lakes, and streams of water. These hills rise by an easy and almost imperceptible ascent, so that I know of none, in this tract, that will not admit of cultivation by the plough.

The country may be divided into three general sections, viz.

First, the elevated lands of Pompey, Fabius, Homer, Locke, and Dryden.

Secondly, the country south of these towns, in which the streams of water descend to the south, and fall into the Susquehanna. This part of our country may be said to be healthy: for but few cases of fever occur in it, and they are in the mildest form of intermittents.

The third general division, comprehending the Lakes, their Inlets, and Outlets, is that part of our country which is the most subject to fevers, and with which I am the most acquainted. This division, however, must be subdivided into the Calcareous country and the Alluvial.

The limestone extends from the eastern part of the military lands to their western boundary. It is from ten to twelve miles in width. It can be easily traced on its north line, through the towns of Manlius, Onondago, a small part of the town of Camillus, through the town of Aurelius, to the Cayuga-Lake. Its southern boundaries are not so easily defined. The limestone is, in general, found covered with a bed of clay, from two to

six feet in depth, which, in wet seasons, renders the roads almost impassable.

This calcareous tract of country, although not so healthy as the two first divisions, is much more so than the one to be described presently. The water in this tract, although not good, is better, and the air is purer, than in the alluvial tract. Many of the fevers of the worst type may be observed to commence with this and the neighbouring towns.

The alluvial country embraces the towns of Junius, Galen, Cato, Lysander, and Hannibal, on the north side of the Seneca and Oswego Rivers; and part of the towns of Aurelius, Camillus, Onondago, Manlius, and the whole of the town of Cicero, on the south.

This tract, from the great number of ponds and marshes, and from its being intersected and watered by the outlets of the lakes, is subject to the usual fevers that are generated by animal and vegetable putrefaction. A particular description of any one of these towns will apply, generally, to all the others. I shall, therefore, describe the town in which I reside.

The town of Camillus, bounded north by the Seneca-river, west by the town of Brutus, south by Marcellus, and east by Onondago, is a level, flat town. On the north-west part, for several miles (on the Seneca), it is a dead level, and this part of the town is annually inundated, by the swelling of this and the Skaneattelas rivers. The west part of the town is intersected and watered by

the outlet of the Skaneattelas ; the east by the Ostisca ; there is one pond, covering about three acres of land, situate on Lot No. 84, near the old Genesee-road, which, at all times, emits a nauseous effluvium ; but, in dry summers, is very offensive to all those who live in its vicinity. From the exhalation arising out of this pond, from four streams and marshes, we cannot but have an air highly impregnated with marsh miasmata.

On the banks of these streams, around our ponds, and in our marshes, there are swarms of bats, gnats, flies, and muschetoes. The bats are so numerous, particularly in the month of August, that in crossing the Seneca, in a still evening, you may strike, at random, and cannot help killing, some at every stroke. They will frequently fly against you, and fall down in the boat.

It is on the banks of these streams, and near our ponds and marshes, that we find the most and the worst cases of fevers. The mud is frequently found of great depth, and our small streams, in many places, are not easily fordable on this very account. The soil, in some parts, consists of a black mould, of considerable depth, and, when trod up, has the appearance of lamp-black and hog's fat, mixed together. In other parts, we have large beds of clay, which is, generally, found covering a stratum of limestone. In some parts, we have a soil of a reddish cast, which appears to be a compound of red sand and clay. This kind of earth is found, in the greatest abundance, in the town of Lysander, and is highly esteemed by our farmers for raising Indian corn.

There is a fourth kind of soil, consisting of sand and brown loam. This soil has once been covered by Pitch-Pines; for it is not uncommon for the farmers to plough up, in it, pitch-pine knots; and in some places, a cart-load of such knots may be collected, in this way, out of the earth, in a very short time. It is remarkable, that there is not a pitch-pine tree to be found within a great many miles of this place; and, in fact, I have not, to my recollection, ever seen one since being in the Military Tract. The country is, in general, heavy timbered. There are some groves of White Pines, Hemlock, Beech, Maple, Button-wood, Butter-nut, Hickory, Chesnut, Oak, Cherry, Elm, Poplar, Bass-wood, White-wood, Ash, and a variety of other kinds.

The water, in some places near the Seneca-River, is salt; in many places, brackish, bituminous, sulphureous; and it is frequently found of a ferruginous taste. All the streams which arise in the calcareous tract of country, deposit a calcareous sediment. The water, in this division, is generally bad, and offensive, especially to strangers who are not accustomed to its use.

There are some Sulphur-Springs in the Military Tract. The one most deserving of notice is found about three miles north of Levana, in the county of Cayuga. On the surface of these waters a scum is frequently met with, resembling sulphur, in colour, taste, and smell. After a heavy shower of rain, all the temporary ponds, and holes of stagnant water, will be found covered with a scum, resembling sulphur.

Query 3. "What degree of heat do you usually experience, in summer and autumn?"

Answer. As there are no meteorological observations made in this part of the country, this question cannot be answered in an accurate manner. In general, we experience considerable heat in our summers, more particularly in the alluvial tract of country.

Query 4. "Are your summers and autumns very sickly?"

Answer. They are. A great difference is, however, observable between those summers which are dry, and those which are otherwise. The former are most productive of fevers.

Queries 5 and 6. "What are your Prevailing Diseases?" "Are Fevers the regular Diseases of these seasons?"

Answer. Bilious fevers, of the remitting and intermitting type, tertians, and quartans. Fevers of the above description may be said to be the regular diseases of our summers and autumns. Intermittents often continue through the winter.

Query 7. "At what time do they commence: during the hottest weather, or not until the season becomes cool?"

Answer. In dry summers, our fevers generally commence about the first of July, and begin to abate about the 15th or 20th of October. Intermittents frequently run into remittents, and, by proper treatment, *vice versa*.

Query 8. "What are the first symptoms? and are your patients very suddenly seized and confined to bed, or are they complaining some days before?"

Answer. The symptoms, on the first attack, are not always uniform, in every patient; nor are they so in several successive seasons. The fever of this year (1803) has been ushered in by cold chills, alternating with a sense of heat, lassitude, soreness of the flesh and bones, pain in the back part of the head, and, in some instances, extending down the spine. In some cases, there was pain under the frontal, and in others under the temporal, bones: pain in the breast, with difficult respiration; while in many there was a dry hacking cough. Some patients were affected with a pain in the lumbar region; others with a pain in the stomach, the lungs, the liver, and the spleen.

The large intestines, the diaphragm, and the mediastinum, have, in different patients, appeared to be the seat of the local congestions. The pain in the head is often periodical, and is accompanied with fever. The fever sometimes commences with vomiting of green and yellow coloured bile. In some cases, there is a constipation of the bowels; in others, dysenteric symptoms occur.

Since the first of July, I have had upwards of 200 patients under my care, with inflammations in the eyes. Some are confined suddenly; but, for the most part, the patients are complaining several days before the more violent symptoms appear. A great proportion of them attribute their disorder, at first, to a bad cold, which prevents them from sending for medical aid for some days.

Queries 9 and 10. "Does the fever begin with a chill?" "Is it worse every other day, or is there no observable intermission, or remission, of the fever in the first stage?" "Are bilious vomitings frequently met with, and what is the effect of emetics?"

Answer. The greatest number of cases may be said to commence with a chill; and the patients are worse every other, every third, or every fourth, day. The intermissions or remissions are generally obvious where depleting means have been used on the third day, sometimes on the fourth. But by far the greatest number of cases are worse every other day.

Bilious vomitings are frequently met with; a nausea always.

Emetics, when given after a copious bleeding, and in the first stage of our fevers, are generally attended with good effects. A remission of the fever almost always occurs shortly after the operation of an emetic, and the fever seldom ever rises to its first height after bleeding, and evacuating the contents of the stomach and bowels.

I have heard of some instances where emetics have been said to do harm, by reason of the violence of their operation. But this happened where they had been administered previously to bleeding. I have met with few, if any, cases in my practice, in which I have not thought I perceived considerable advantage from the use of emetics.

Query 11. "What are the usual febrifuges you employ, and the effects of them?"

Answer. When I first commenced practice in this country, I used, in general, the following febrifuges: viz., James's-powder, and emetic-tartar. With the use of these means, the usual diluents, such as balm-tea, sage and maiden-hair teas; rice and barley water; and a low diet. My patients generally recovered. The deaths, in cases of bilious fevers, have, at no time, exceeded one in fifty.

This season, which has been sickly, out of between four and five hundred patients, I have lost but one. This was an aged woman, of the name of Leech, a resident of Lysander. The first time I saw her, the symptoms were putrid in a high degree. She lived five days after I saw her, and died on the eleventh day of her disorder.

I have been called, as a consulting physician, to some others, in the last stage of the disease, and when the symptoms have been nervous and putrid. These, in a few instances, have died. These cases, as occurring out

of the ordinary course of my practice, and not exclusively my own patients, are to be excepted.

This season, my practice in fevers has been different, owing, however, to the symptoms being more inflammatory than in preceding years. I commence, as formerly, with bleeding, once, twice, or oftener, if necessary: then I give an emetic; after which I exhibit nitre uncombined, or order an infusion of the root of Little Solomon's-Seal, for a constant drink. If the emetic should leave the patient costive, I give, in some cases, a pill composed of soccotrine aloes and tartar-emetic; in others, sulphur, which often answers better than more drastic purgatives, and will sometimes move the bowels when they fail.

When rheumatic pains occur, I give flowers of sulphur and g. guaiacum, combined.

When dysentery occurs, which I conceive to be the same disease differently modified, I bleed, use the above-mentioned infusion, and administer Dover's-powder twice in twenty-four hours, in a full dose. I also make use of the starch-clyster with laudanum, the usual glutinous drinks, and diet.

When the fever appears with inflammation of the eyes, another modification of the disease, I bleed, give nitre, order an infusion of the roots above-mentioned, administer a cathartic (most generally Glauber's salt), epispastics, and sometimes sulphur, in lieu of salts, in some cases.

When the inflammation does not subside from the use of the above means, I introduce setons, and bore the ears.

I forgot to mention the use of the sugar of lead, dissolved in water, and pledgets of fine cloth wetted with it, and applied cold to the eyes, as one of my first applications. After the inflammation has abated, I generally wash the eyes with weak brandy and water.

* * * * *

My method of treating intermittents is as follows. I bleed in the greatest number of cases, for I almost always find a determination to some of the vital parts. I give an emetic, then recommend to my patients to do nothing for their complaint, until they have had about twenty regular paroxysms. I then order another cathartic, after the operation of which I give the bark, alum, and ginger combined. Most generally, after taking the first dose, the fits leave them, and do not after again recur; never, indeed, when the patient is prudent in returning to his former habits of industry*.

In this practice of treating intermittents, I stand pretty much alone. The rest of my brethren in this and Cayuga-County generally endeavour to cure this complaint without bleeding. I think I have seen the worst effects from this neglect. Intermittents, in which the bark and other tonics have been given previously to bleeding,

* See Note A, at the end of this article, in the next half volume of this Journal.

frequently became putrid, &c. I have often seen pleuritic cases observe the type of an intermittent. What would be the effects of the usual practice in such cases*?

Query 12. "What is the general duration of these fevers?"

Answer. The general duration of our fevers may be said to be about nine days. Some, however, terminate, when speedy medical aid can be procured, on the 3d, 5th, 7th, 11th days; while some cases extend to the 20th day, and even beyond that period.

Query 13. "What proportion die?"

Answer. In preceding seasons, in bilious remittents, the proportion was one in fifty. This season, I can almost say, that not one has died in the circle of my practice, or but one, Mrs. Leech, formerly mentioned. I had not an opportunity of seeing her till the disease was in its advanced stage. I have always thought, that if depleting means had been used early in this case, it would not have ended fatally.

Perhaps, it will not be improper to mention, that at no period since my settling in this country has my practice been more extensive than this season. I have not been able to attend, personally, to more than three-fourths of those who have called upon me. * * * * * On an average, I have visited at least ten patients every

* See Note B.

day, from the 1st of July to the 20th of October. This estimate, I am persuaded, is too low. * * * *

Query 14. "When they recover, is the bark much employed, and with what success?"

Answer. I make but little use of the bark in our fevers. I prefer letting them recover without the use of this medicine. When they are convalescent from the fever, and when the intermissions are obvious, I do not use the bark. I find it to increase all the febrile symptoms; that the next paroxysm after the use of this medicine returns with redoubled force, and that the remissions are less obvious, and the complaint soon verges to the last stage, putrid and nervous. I have, therefore, with great caution abstained from the use of the bark, and the usual tonics, in our fevers generally.

In periodical head-achs, and in one case of an inflammation of the eyes, I have used opium and bark, with evident advantage. In no other cases, this season, so far as I recollect, have I found much benefit from the use of the bark in fevers, except in the following: viz., when the fever becomes nervous and putrid (the very stage which is produced by the injudicious exhibition of the bark, and other tonics, given prematurely), in such cases my chief dependance is upon the bark. I then give bark, valerian, serpentaria Virgin. cortex aurant. flor. chamemel. in decoction. In such cases, I also use epispastics, wine sangaree, elix. vitriol., and in some cases ardent spirits. I have often derived much benefit from the use of unguent. cœrul., rubbed upon the glan-

dular parts, with small doses of calomel, opium, and camphor, musk, castor, and saffron combined.

Query 15. "When it proves fatal, upon what day of the disease is that generally the case? What is the appearance of the skin; does it become yellow, or orange-coloured, or livid? When does this appearance first show itself? What is the state of the tongue? Are your patients very thirsty, as in most febrile complaints?"

Answer. When the disease proves fatal, it is, in general, on, or about, the twentieth day. We have had one instance, in this country, of a fatal termination on the seventh day (Edward Donner, of Onondaga), who was supposed to have taken the fever by being several days on and about the Onondaga-Lake: one in Scipio, county of Cayuga, who died on the fifth, and one on the ninth day of their disorder. The two last were taken ill soon after being exposed to marsh exhalations, at the outlet of the Cayuga-Lake. A company, of about twenty persons, went from the town of Scipio to the outlet, where there is a large marsh, to procure hay. Twelve of the twenty sickened, and two died. About the same number went from the town of Milton, at the same time, and the effect, I am informed, was nearly the same.

It is a common thing to hear of the inhabitants of the southern towns, being taken ill of fever, shortly after being exposed to the exhalations from their lakes, streams, and marshes. * * * *. Doctor B. Beach,

of Marcellus, who is in the employ of the directors of the western turnpike company, informs me, that in taking up a causeway, across a marshy piece of road, in the summer of 1802, five out of seven of his hands, who were employed in removing the timber, sickened. He attributed their sickness entirely to the effluvia arising from the sloughy spot. All these patients recovered.

The tongue, at first, appears whitish. On or about the ninth day of the disease, sometimes sooner, if the complaint does not terminate in health, it begins to assume a brown colour, sometimes a black colour, and is much furred. The teeth, about the same time, become black, and covered with a brownish or black crust. The patients, in this as well as the preceding stages, are very thirsty, often beg, and if denied will steal, large draughts of water.

Query 16. "What is the state of the stomach? Is it apt to be in a very disordered state? When does irritation of this organ usually discover itself, and in what way? What is the appearance of the discharge from it? Is the *black vomit* of matter, resembling coffee-grounds, a common occurrence, and is it usually a fatal symptom? Upon what day of the disorder does it usually occur? Do haemorrhages frequently occur? How is the brain affected? What is the state of the pulse?"

Answer. An affection of the stomach may, in general, be considered as one of the first symptoms. I have often been called to patients taken in the night, and

found them discharging from the stomach yellow and green-coloured bile. This irritation sometimes continues through the disease. I often cure it by the application of an epispastic to the region of the stomach, with bleeding and an emetic. The irritation generally goes off the second or third day.

The discharge resembling coffee-grounds is a rare occurrence. I have met with but one instance of it, since I have resided in the western country. This was in William Gilchrist, junr. His complaint was uncommon throughout. He was taken ill in the fore part of the season, with a vomiting of bilious matter, which continued, without much abatement, for three or four months. The quantity of bile which he discharged, in this way, is almost incredible. When I was called to him, a few days previously to his death, I found him emaciated, to an astonishing degree. He had a hæmorrhagy from his gums; or, rather, an oozing of blood from them. There was a tumefaction of the liver, and he vomited, several times while I was with him, a matter resembling coffee-grounds. Notwithstanding his weakness, and almost constant vomiting, he lived seven days after I saw him. He continued, until within a few moments of his death, to discharge not only his diet, but every thing that had been administered to him. *This, I say, is the only instance of BLACK VOMIT that has ever, to my knowledge, occurred in this country.*

Hæmorrhages often take place, not, however, this season. I have met with them from the nose, the ears, the lungs, and from the gums, from the uterus, urethra,

from issues, setons, and ulcerated legs : but not, generally, to an alarming degree. They are easily subdued, and are seldom fatal. I have never, in any instance, seen a hæmorrhage from the pores or surface of the body.

On their first attack, our fevers are evidently inflammatory, and a determination is generally discovered to some vital part. When congestion appears, or determination to the head, a delirium is the consequence. This symptom, however, with the others, generally goes off soon after using evacuations.

In some cases, the head is periodically affected. To persons thus diseased, after depletion, I have given large doses of the bark and opium, which, with blisters, will generally effect a cure.

The pulse is full and strong. In the first stage, it does not often exceed 120 strokes in a minute, and is frequently found beating from 95 to 115. I have met with some cases, in which the pulse was much slower, proceeding from an approximation to indirect debility.

—I have met with the intermittent pulse ; with a soft slow pulse : this happens where the brain appears to be most affected. But, in all these preternatural states of the pulse, venesection will abate its frequency in the one case, and increase the number of pulsations in the other.

N. B. The remainder of this paper will be given in the next regular number of the *Journal*.

XVI. *Extracts from a MS. Journal of the late Mr. JAMES BOYD, of Lancaster, in Pennsylvania. Concluded from Vol. I. Part I. p. 99.*

THE Creek-towns are more regular than those of the Chactaws; their houses are better, and not so much scattered. In the centre of each town, their Council-houses stand. These are four shails built so as to front each other, which form a square. In these are large seats, covered with platted reeds. The posts, which support the roof, are generally carved, and painted, after their own taste, which make a tolerable show.

Near the square, stands a large Round-House, in the form of a lime-kiln. In this they dance and drink the "Black-Drink," at certain times.

December 31. The weather is so warm that, though at this season of the year, the frogs make as much noise as they do in the middle of Spring, to the northward.

We are now out of the Chactaw-country. Their land, in general, is broken, and the soil thin, but very well watered.

The river Tombigby is navigable within sixty miles of the Tenace-waters, and runs through the centre of the Chickasaw nation.

That part of the Creek-country we passed through, is, in general, pine-barren, except what lay on the ri-

vers, which is very good. These Indians, in general, live on, or near, the banks of rivers: they seem to be tolerably industrious; their little places are well fenced in, and many of them have stocks of horses, cows, and hogs; also negroes.

XVII. *Miscellaneous Medical Facts. Communicated in a letter to the EDITOR, from THOMAS D. PRICE, M. D., of Jerusalem, in Virginia.*

I HAVE tried Seneca (*Polygala Senega*) in Pneumonia, after the use of the lancet, with the happiest effect, which is agreeable to your opinion*.

The Cassina, or Yopon†, is, among the common people, in high estimation as a sudorific. In colds, and in pleurisies, they use an infusion of it, warm. It is brought to this place from North-Carolina. They say it is an Indian remedy‡.

* "I have had no experience with the Seneca in cases of Pneumonia. Notwithstanding what has been so frequently said concerning its great efficacy in this disease, I confess that I cannot believe, that it is a medicine adapted to the very first stage of pneumonia, while violent inflammatory symptoms are still present. After the liberal use of the lancet, it is highly probable, that the Seneca will be found a very important medicine." *EDITOR'S Collections, &c. Part I. p. 55.*

† *Ilex vomitoria* of Aiton. *Ilex Cassena* of Michaux. *EDITOR.*

‡ It is, no doubt, an Indian remedy; and is, I think, a vegetable deserving of more attention than has, hitherto, been bestowed upon it. *EDITOR.*

The Melia is very common about this. I have prescribed it as an anthelmintic. The people are much prejudiced against it. They tell me that they have known too many children killed by it.

In two cases of old scrophulous ulcers, where the constitution was much impaired, I recommended a strong decoction of the bark of the *Magnolia glauca*, with great success. In chronic dysentery, the strong decoction of the green leaves is highly recommended by the common people, though I have never made the experiment.

The Nottoway tribe of Indians have a town not far from this. I am told, from respectable authority, that some of them have cured syphilis, with vegetable remedies. Only one old woman is now alive, who is said to possess the knowledge of the vegetable. As yet, I have not been able to obtain the secret, or find out the plant, though I have been anxious on the subject. Whenever I do, I shall inform you of it. I strongly suspect, that *Sarsaparilla** is the principal ingredient, as it grows plentifully in the adjacent woods.

*Jerusalem, Virginia, October 12,
1804.*

* *Aralia nudicaulis* of Linneus. This is a common plant in many parts of the United-States, and is best known by the name of *Sarsaparilla*. See First Supplement, &c., pages 17, 18. EDITOR.

XVIII. *Notice of the Yellow-Fever, as it appeared at Philadelphia, in the year 1747.*

THE following memorandum is worthy of preservation. It is an extract of a letter from Mr. David Palmer, to the late Mr. Edward Penington, of Philadelphia.

“ People are exceeding sickly in many parts of the country, and especially in this city, where upwards of twenty are frequently buried in a day ; the Yellow-Fever being very brief, carrying off healthy people in two or three days. I heartily wish we may both escape the dangers with which we are threatened, that we may once more meet * * *, which will be a particular pleasure to thy assured friend,

“ DAVID PALMER.

“ Philadelphia, 6th mo. 29th,
1747.”

In a former part of the *Journal**, there are some memorandums concerning the malignant fever of the same year. There is no doubt, that much interesting matter, on the same subject, may be found in the letters, or diaries, of many of the old inhabitants of Philadelphia, about this memorable period.

EDITOR.

* See Vol. I. Part I. pages 136, 137.

XIX. A Memoir on the Treatment of the Silk-Worm.

Communicated to Mr. JEFFERSON, President of the United-States, and of the American Philosophical Society, by Mr. ROBERT LOWRY, of Siena; transmitted by Mr. JEFFERSON to the Society; and by the Society to the EDITOR of this Journal.

HATCHING.

TOWARDS the 1st of May, about which time the leaves of the *White Mulberry* are grown, and yet tender, the linen, to which the eggs are fixed, should be wet, on the side opposite to that on which they are attached, with white wine; the eggs gently detached with a pen, or any thing which will accomplish this without injuring them, and then spread upon sheets of paper, in a warm room. One fronting south, with us, and kept closed, will always be sufficiently warm to effect the hatching, without the assistance of artificial heat.

In Italy, some of the women, who in general attend to the silk-worm, place the eggs, wrapped up in cloths, in their bosoms during the day, and, at night, in their beds, in such a situation, that they may partake of the heat of the body. But this appears only to forward a few days the operation of Nature. A sufficient degree of heat will always occur in the southern states of America, towards the end of April, or beginning of May, in the situation I have mentioned.

It must be observed, that, in no stage of the insect, either when the eggs are placed to hatch, or after the insect is produced, should a draught of air be suffered; the temperature of the room should be kept as equal as possible; the sun not be allowed to reach either the egg or the insect; animals of every kind should be carefully kept out of the room: rats and mice are particularly destructive.

These remarks, as well as those which follow, I have collected from those who have, for years, been accustomed to raise the silk.

I am informed (I have had no opportunity to consult the work), that Rosier, a French writer, ascertains the heat in which the worms should be maintained, at 16 degrees of Reaumur's thermometer. In Tuscany, the thermometer is marked at 19', Vermi di Séta, which I am inclined to think the proper heat in which they should be maintained. The use of the thermometer is becoming common, and is of great utility.

MODE OF TREATMENT, WHEN HATCHED.

Having provided a sufficient quantity of mats, which should be arranged at such distances from each other, as to leave convenient room to watch and cleanse the insect, and give them sufficient air, the moment the eggs are perceived to be hatching, the smallest and tenderest leaves of the mulberry must be distributed very lightly over them. The insect just produced immediately fixes itself to the leaf, and begins to eat. The

eggs will not all hatch at the same time; but as fast as they do, the insect, thus attached to the leaves, and so minute, as to be visible only to close examination, must be gently conveyed and spread on the mats, so as not to be on each other.

For the first few days, it is recommended to put them in a box, where they will be less exposed, and warmer. For a few days, until the insect acquires strength, the leaves on which it feeds, of which it gradually forms a kind of bed, should not be removed or touched; and in giving it food, for a short period, so tender is it, that care should be observed not to place even the smallest leaves on it.

The first stage passed, the insect increases rapidly; its food should be given twice every day, at fixed hours: very early in the morning, and at mid-day. The mats should be changed every other day, to remove the refuse of the leaves, and the ordure of the insect, in which, were this cleanliness not observed, they would soon be buried, and destroyed. In removing them, while young, the leaf should be lifted; but, after they are older and larger, they may be gently lifted with the fingers, without injury.

They feed about six weeks, during which time, attention to feeding them at the stated intervals, giving them abundance, and cleanliness, seem to be the most necessary points. During this period, they sleep four times, about 24 to 30 hours each time, but not all at the same period. No uncommon noise, therefore, should ever

be made in the apartment where they are, and those which sleep should not be handled, except when the whole are removed to clean the mats, and then with the greatest gentleness. Their sleep will be perceived by their remaining without eating, and motionless.

As the insect increases, it becomes excessively voracious, devouring its food with incredible appetite, and with a noise which may be heard at a considerable distance, and, towards the end of the six weeks, the mats should be changed every day.

The Italians sprinkle them sometimes with vinegar, they say, to strengthen them. This is done when they seem not to eat with appetite; but it may be more useful in correcting the air than in strengthening their stomachs. The custom is not general.

The *white* mulberry is the proper food of the silk-worm. I am not sufficiently acquainted with the botany of the United-States to know whether this be found or not. The *red* mulberry is abundant; but they tell me here, that the worm will not thrive on it, and that even the white should be in a state of cultivation. The first difficulty which occurs in raising silk in the United-States, should the latter not be found, is the providing, in sufficient quantities, the proper food.

OF THE SPINNING OF THE SILK-WORM.

As soon as the worm has done feeding, which will be perceived about the end of six weeks, as well by a cer-

tain restlessness, as by their turning of a bright yellow-greenish colour, it is necessary to fix on their ends, against the wall, small bundles of twigs of rough bark. These should be placed on the tables where the insects are, immediately contiguous to them, and the worm will, in general, find its way to them. They may, however, be put with the fingers, with one or two leaves (to ascertain whether or no they have done feeding) among the little branches of the twigs. These bundles are made of a kind of brush, resembling the branches of the pine, but devoid of smell, small and tender, but, at the same time, of a rough outside, so that the insect can adhere to them, and, at the same time, force its way through them without injury. It wraps itself entirely up in its web, forming a ball of the shape of an egg, and is usually six to nine days in completing its spinning. This will be perceived by the hardness of the ball.

At the end of this time, those which are designed for seed must be separated from those for use, and a thread passed through some of the outer filaments of the balls, taking care not to injure the inside. The Italians pretend to distinguish between the male and female, and chuse an equal number of each to furnish the seed; but the only external difference is in the size; the former, they say, being larger, the latter smaller. The balls thus strung together should be suspended horizontally along the wall, and coarse linen fastened, hanging down the wall, immediately under them.

In three or four days, the butterfly, already formed, cuts its way through the bottom of the ball, and, creep-

ing among the cloth, until it finds another of the insects, they copulate, and remain joined together two days, when they separate, waste the whole substance of their bodies in the eggs which they fix to the cloth, and, as soon as this seemingly inevitable law of their nature is accomplished, they drop dead.

OF THE SILK DESIGNED FOR USE.

The balls designed for use, some say, should be taken from the bosco (the name the Italians give the bundles where the worm spins) in six days; others, in nine. All the insects do not go to the bosco the same day. It must, therefore, be an impossible matter to ascertain the different days which they have been spinning. I am inclined to think, that it is ascertained by the ball becoming firm, and of a colour which shows that the web has acquired the proper thickness. It will, before, be soft and thin. Practice and experience in this, as in every other case, must be the best guide. It must only be observed, that the balls designed for use must be exposed to a hot sun, or even in an oven, to kill the worm, before the butterfly begins to form, as this instantly begins to eat its way out, and, of course, destroys the thread of the web.

Of the drawing or spinning out the thread of the web, which is considered, by the Italians, as the most difficult process of obtaining the silk, I shall attempt to give a description.

A small copper boiler, about $2\frac{1}{2}$ feet in diameter, and 6 to 8 inches deep, is placed in the centre of a square of masonry, with a small fire-place constructed under it. The masonry does not exceed three feet in height, as it allows a moderate sized person to stoop or reach, with ease, over the boiler. The principal operator stands on the right side of the boiler, moving with the foot a rope, which operates in turning a large wheel, placed behind the boiler. This wheel is about 30 inches broad, and 5 feet in diameter. The second operator, on the left, throws the balls of silk into the water, which should be kept as near to boiling hot as possible, without being actually boiling. With a small bundle of twigs he strikes, or, more properly, works, round the balls, with a moderate degree of force, touching and turning them, so that the water disengages the end of each web, which is caught up by the broom or brush, and instantly handed over to the right hand operator, who receives them, separates the outer end, which is generally coarse, and not fit to be spun off; and joins 4, or 6, or 8 threads, or so many as may be necessary, which for different use will of course be of diverse thickness. Projecting a little over the edge of the boiler, there are five hooks fixed horizontally in a piece of wood, which is fastened across to two posts erected at the back of the boiler. The threads grasped together in the hand are caught into each of the hooks, passed over 5 little wheels of lignum vitæ, returned in towards the boiler, making a cross of the thread. These wheels are fixed about $2\frac{1}{2}$ feet above the boiler, so as to be conveniently reached by those who reach the thread. The threads are then passed through small circles of iron, being one for each, and having an opening on one side

of each circle, to admit the thread. These circles are fixed in a light piece of wood, which, by a small wheel operated on by a cord fixed round the axle of the large wheel, is kept moving backwards and forwards in the space of three or four inches. The objects of these circles is to keep the threads at equal distances from each other as they are wound off by the wheel, passing round the bottom of it first. These different turns of the silk seem to be necessary to connect together the number of very fine minute threads of the web of which each thread is composed, when wound off on the wheel. There would appear to be some glutinous matter which enables these threads, so fine as to be hardly visible, to adhere to each other, and not afterwards be separated by any operation of dyeing, weaving, &c. The thread, notwithstanding that it comes so immediately out of the water, is wound off on the wheel perfectly dry, and of a bright orange colour. To enable the person who may attempt the operation of drawing the silk, should it be introduced in the United-States, I have procured a drawing of the apparatus, which may render it more intelligible.

I have been informed, that, in the northern parts of Italy, where the best silk is made, the machine they use takes only one thread, and that it is, in consequence, better and more evenly spun.

Should these observations be productive of introducing, through the extensive means, and enlightened policy, of your excellency, the culture of the silk, in its different branches, into the United-States, and without which we must be under tribute to other countries, for that useful

and beautiful part of our dress, I can have no higher recompence than having been in the slightest degree useful to my country.

ROBERT K. LOWRY.

Siena, in Tuscany, 3d October, 1804.

P. S. I omitted mentioning the use to which the balls which have produced the butterfly are put, the webs of which are of course cut. These, after being steeped in lukewarm water for a few days, are dried, and then carded in much the same way as cotton, but requiring wire of much greater strength. In the same way is used such of the silk which, by the colour, is inferior in quality, and should be separated from that intended to be spun off, and applied to finer manufacture.

DESCRIPTION OF THE PLATE.

A. The boiler.

B. A basin of cold water, in which the second operator, who supplies the boiler with the silk balls, dips the fingers, to prevent their being scalded in taking out the skeletons of the worms remaining floating, after the silk is wound off, and which it is necessary to do every four or five minutes, to prevent the boiler from being unnecessarily incumbered. The water of the boiler should be changed every six hours.

C. A square board, against which the first operator leans, to avoid the heat of the stove.

D D. Two steps for the first operator.

E. The rope by which the wheel is turned, which is kept in motion by the first operator with one foot.

F. Five hooks, projecting over the boiler. These are shaped like one turn of a common cork-screw, the point up, but, of course, not sharp, to avoid hurting the hand of the person who catches the silk into the hook.

G. Five small wheels of lignum vitæ, which turn with the action of the large wheel in drawing the silk.

H. Five circles of iron, to receive the threads of silk, before they are finally wound on the wheel. These circles are shaped nearly as at a, and fixed in a piece of wood, which is horizontally moved backwards and forwards, by a small wheel, marked I, which is turned by a small cord, K, passed round the axle of the large wheel.

L. The threads of silk catched into the hooks F, then passed over the wheels G, and doubled in towards the boiler, so as to form a cross of the threads, before they are hooked into the circles H; and so on round the wheel, winding on the bottom of the wheel first.

M. The wheel.

N. The fire-place.

O. The chimney.

XX. Meteorological Observations made at Spring-Mill, thirteen miles N. N. W. from Philadelphia, lat. 40° 4'. By Mr. PIERRE LEGAUX, superintendant of the Plantation of the Society for promoting the cultivation of Vines in Pennsylvania.

JANUARY, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME-THER.	ANEMOMETER.	WEATHER of every day.			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrêmes. deg.	Degrees. Moyens. deg.	Mean. deg.	Foot. In.						
1	8 0	5 0	0	4 3 0	22 3		E. Cloudy, snow all night.			
2	5 1	0 0	0	3 0 0	25 2		W. N. W. Clear, fair.			
3	5 1	0 0	0	3 0 0	25 2		W. N. W. Overcast.			
4	8 7	0 0	0	7 5 0	15 1		W. N. W. Very stormy wind.			
5	11 2	0 0	0	6 5 0	17 4		W. N. W. Fair, clear, windy.			
6	9 5	5 0	0	7 3 0	15 6		W. N. W. Fair, clear.			
7	7 2	5 0	0	2 7 0	25 9		W. var. to Fair, rain.			
8	4 2	0 0	0	1 0 0	29 8		W. S. W. Variable. Fair, clear.			
9	7 4	7 1	0	2 5 0	37 6	11 8	E. Rain all day.			
10	1 1	5 5	0	1 3 0	34 9	1 7 2	E. Rain, hail, and snow.			
11	5 2	0 0	0	3 5 0	24 1		W. Fair, clear.			
12	15 3	5 5	0	6 0 0	18 5		N. E. Fair, clear.			
13	-3 5	0 5	0	1 3 0	34 9		W. Foggy, fair.			
14	8 3	0 0	0	5 5 0	19 6		N. W. Clear, very windy.			
15	10 4	0 0	0	7 0 0	16 2		E. Snowy all day.			
16	5 2	5 5	0	1 5 0	28 6	3	E. Overcast, snowy.			
17	0 14	0 0	0	7 0 0	47 7		S. Fair, clear, calm.			
18	2 4	0 0	0	3 0 0	33 7	5 9	S. Fog, fine rain, storm at W. N. W. in the night.			
19	7 3	0 0	0	5 0 0	20 7		W. N. W. Clear, stormy.			

JANUARY, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMÈTER.			UDOME- TER.	ANEMO- METER.	WEATHER of every day.
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extrêmes. deg. $\frac{1}{10}$	Degrees. Moyens. deg. $\frac{1}{10}$	Foot. rain & snow. In. $\frac{1}{12}$ $\frac{1}{16}$			
20	10 - 0	4 7 - 0	21 4		E, S. E.	Snowy all day.
21	5 5 - 0	5 7 - 0	19 2	3 2	N. W.	Snowy, stormy wind.
22	12 5 - 0	8 3 - 0	13 3		N. W.	Clear, stormy.
23	14 - 0	6 5 - 0	17 4		N.	Fair, clear.
24	1 4 - 0	3	38 7		N. W.	Cloudy.
25	10 2	6 5	46 6	6	N.	Cloudy, rain.
26	11 1	5	43 2		N. W.	Clear, cloudy.
27	9 1	2	36 5		N.	Snow all day.
28	3 - 0	1 - 0	29 8		N. W.	Snow, cloudy.
29	1 1 - 0	1 7	35 8	5 10	N. W.	Stormy, overcast.
30	4 5 5 - 0	2	36 5		N. W.	Clear.
31	4 5 9 - 0	3 - 0	31 4		N. E.	Clear.
THE 12TH.	Le deg. du plus gr. froid. 15 5 - 0	Greatest deg. of cold. 2 9 - 0	4 5 15 Total of the fall of WATER.			TEMPERATURE OF THE MONTH. Very snowy.
	Le pl. gr deg. de chaud. 14	Greatest deg. of heat. 63 5	3 days of rain, 7 of snow, & 4 of storm.	Prevailing wind of the month N. W. & W. N. W.		PREVAILING SICKNESSES.
THE 17TH.	Var. 29 5	Var. 66 4				
	Temper. 1 8	Temper. 0, 28				

FEBRUARY, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrêmes. deg.	Moyens. deg. $\frac{1}{16}^{\circ}$ 0 [*] deg. $\frac{1}{16}^{\circ}$ 0	Degrees. Mean. deg. $\frac{1}{16}^{\circ}$ 0	Foot. In. $\frac{1}{12}$ $\frac{1}{16}$						
1	3 5 - 0	2 5	37 6			S.	Cloudy.			
2	8 7 - 0	1	34 3			N. W.	Cloudy.			
3	5 9 - 0	3 7 - 0	23 7			N. W.	Cloudy, overcast.			
4	9 3 - 0	3 - 0	25 2			N. W.	Cloudy, overcast.			
5	2 6 - 0	2 - 0	27 5			N. W.	Cloudy, overcast.			
6	12 2 - 0	2 5 - 0	26 4			N.	Clear.			
7	7 5	2 5	37 6	1 6	E.		Heavy rain.			
8	1 5	3	38 7		N.		Rain, overcast.			
9	5 0	3 5	39 9		N. W.		Fair.			
10	3 7 - 0	3 3	39 4		E.		Cloudy.			
11	10 0	7 5	48 9		N. E.		Cloudy.			
12	15 5	7	47 7		N. E.		Fair, clear.			
13	9 3 - 0	4 7	42 6		N. W.		Overcast, rain in the night.			
14	12 5 - 0	6	45 5	1	S.		Rain.			
15	6 5	2	36 5		N. W.		Overcast.			
16	4 6 - 0	3 7 - 0	23 7		N. W.		Overcast.			
17	1 1 - 0	1 7 - 0	28 2		N. W.		Clear.			
18	6 1 - 0	1 - 0	29 7		W. N. W.		Fair, clear.			
19	4 3 - 0	3	38 7		S.		Fair, clear, snow at eve.			

FEBRUARY, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>
	de Mr. De REAUMUR.		of FAHREN.	WATER of rain & snow.			
	Degrés. Extrémes. deg. $\frac{1}{10}$ *0	Moyens. deg. $\frac{1}{10}$ *0	Degrees. Mean. deg. $\frac{1}{10}$ *0	Foot. In. $\frac{1}{12}$ $\frac{1}{16}$			
20	5	4 7	42 1			N. N. E.	Fair, clear.
21	1 5	0 3 5	39 9			N.	Fair, clear.
22	8 5	- 0 3 5	39 9			S. S. E.	Fair, clear.
23	3 - 10	- 0 5	43 2			S.	Fair, clear.
24	1 11 3	- 0 4	41			Var.	Overcast.
25	9	6 5	46 6			W.	Fair, clear.
26	1 12	- 0 5	43 2			N.	Fair, clear.
27	1 11	3 5	39 9	2 14	E. S. E.	Overcast.	
28	6 1 3	2	36 5		E.		Snowy.
RECORD.	the 6th	Le deg. du plus gr. froid. 12 5 0	Greatest deg. of cold. 3 9	2 8 14 Total of the fall of WATER.	Prevailing wind of the month N. W. 10 days.	TEMPERATURE OF THE MONTH. Fair, agreeable, whole- some.	
		Le pl. gr. deg. de chaud. 15	Greatest deg. of heat. 65 7	4 days of rain, 2 of snow.		PREVAILING SICKNESSES.	
		Var. 27 5	Var. 61 8				
		Temper. 2 36	Temper. 37 3				

MARCH, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.			UDOME- TER.	ANEMO- METER.	WEATHER of every day.
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extremes.	Degrees. Moyens.	Degrees. Mean.			
	$\frac{1}{10}$	$*0$	$\frac{1}{10}$	$*0$	$\frac{1}{10}$	
1	0		5	43 2		N. N. E. Fair, clear.
2	10		0	44 9		N. N. W. Fair, clear.
3	12	5	5 7	43 9		E. Fair, overcast.
4	0		5 3	42 1		E. N. E. Very fair.
5	10	5	0	42 6		E. N. E. Very fair.
6	3	5	4 5	42 5		Fair, rain in the night.
7	12	5	5 3	48 9	4 2	S. E. Foggy, fair, agréable.
8	17	5	12	59		N. E. Foggy, overcast, hot;
9	7	5	14 7	65 1	1	thun. storm at 7, P. M.
10	22	5	13 7	62 8		S. S. E. Foggy, fair, cloudy.
11	10	5	13 7	62 8		
12	17	5	5 5	44 4		Foggy.
13	5	6	5 5	52 2	9	N. W. Rain, fair.
14	12	6	9	52 2		
15	7	5	3	58 7		N. N. W. Frost, cloudy, cold.
16	5 3	3	3	52 7		N. N. W. Frost, snowy, clear,
17	1	5	0	52 7		cold, and windy.
18	2	5	3	51 3		N. N. W. Fair, cold, windy.
19	5	5	3	58 7		
20	4	5	3	58 7		S. S. W. Fair, clear.
21	10	5	3	58 7		
22	1	5	7 3	48 4		S. W. Very fair, agreeable.
23	16	5	7 3	48 4		
24	7	5	9	52 2		S. White frost, fair, agreeable.
25	18	5	9	52 2		
26	4	5	13 3	61 9		S. S. W. Very fair, vegetative.
27	22	5	13 3	61 9		
28	6	5	15	65 7		E. S. E. Fair, hot.
29	25	5	15	65 7		

MARCH, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.			UDOME-TER.	ANEMO-METER.	WEATHER of every day.
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extremes. deg.	Degrees. Moyens. deg.	Mean. deg.			
20	4	5	9 3	52 9		S. E.
21	13	5	14 7	65 1		W.
	16					Rainy, cloudy, clear, sto. at W. & N. W. in night.
22	1	5 - 0	2 3	37 2		N. N. W.
	6					Fair, clear, windy.
23	3	5 - 0	1 5	35 4		N. N. W.
	6	5				Fair, dry,
24	4	- 0	3 3	39 4		S.
	11	5				Fair, cold.
25	1	- 0	9	52 2		S.
	19					Fair, agreeable.
26	5	5	13 5	62 4		S.
	21	5				Fair.
27	4	5	6 7	47 1		E.
	9					Overcast, cold, damp.
28	4	7	4 7	42 6		N. E.
	5					Rain all day.
29	4	3	6 5	46 6		E.
	9					Cloudy, cold.
30	3	7	4 7	42 6	1 8 4	E.
	6					Rain, day and night.
31	6	6	6	45 5		E. N. E.
	6					Rain, overcast.
RECORD.	the 14th	Le deg. du plus gr. froid. 5 3	Greatest deg. of cold. 0	2 10 5 Total of the fall of WATER.		TEMPERATURE OF THE MONTH.
		Le pl. gr. deg. de chaud. 23 5	Greatest deg. of heat. 84 9	Prevailing wind of rain, 3 of snow, 1 of thunder, 1 of storm.		Very fair, agreeable, dry, and favourable to agriculturists.
		Var. 28 8	Var. 64 8			
		Temper. 7 1	Temper. 48			
RECORD.	the 19th					PREVAILING SICKNESSES.

Note. The Vine bled on the ninth of this month.

Meteorological Observations.

APRIL, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.			UDOME- TER.	ANEMO- METER.	WEATHER
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extremes.	Moyens deg. $\frac{1}{10}$ * 0 deg. $\frac{1}{10}$ * 0	Degrees. Mean. deg. $\frac{1}{10}$ * 0			
1	7	13	7	62	8	N.
20						Very fair.
2	4	5	11	56	7	S.
17	5					Very fair, agreeable.
3	4	5	11	56	7	S.
17	5					Foggy, cloudy, rain in the night.
4	4	7	10	55	2	N.
16						Very fair.
5	4		7	47	7	E. N. E.
10					6	Overcast, rainy.
6	5		9	52	2	S. W.
13					10	Rainy.
7	4	7	7	48	4	W.
10						Fair, clear.
8	6		10	55	6	W.
15						Windy, cloudy.
9	9	5	11	56	7	W.
12	7				2	Rain, stormy.
10	7		8	51	6	W.
10	5					Stormy, cloudy.
11	4		10	54	5	W.
16						Clear, windy.
12	5	5	12	59		W.
18	5					Fair, clear.
13	4		12	59		W.
20						Fair, clear.
14	6	3	14	65	1	W.
23						Fair, clear.
15	8		15	67	3	N.
23	5					Fair, clear.
16	2	5	8	51	6	N.
15						Fair.
17	7	5	15	66	9	Calm.
23	3					Very fair.
18	5	5	15	66	4	W.
25						Very fair, clear.
19	9	5	18	73	2	Calm.
27						Cloudy, fair.

APRIL, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month:	THERMOMETER.			UDOMÉ- TER. WATER OF rain & snow.	ANEMO- METER.	WEATHER <i>of every day.</i>
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extrémes. deg. $\frac{1}{10}$ *0	Moyens. deg. $\frac{1}{10}$ *0	Degrees. Mean. deg. $\frac{1}{10}$ *0			
20	7	5	11	7	58 3	6 E. Overcast, rainy.
16						Rain, storm.
21	12		12	59	1 6	E. Cloudy.
12						
22	7	5	10	5	55 6	S. Fair, cloudy.
13	5					
23	6		9	5	53 6	
13						
24	7		8	5	51 1	7 12 S. W. Rain.
10						
25	6		10	5	55 6	W. var. Fair, clear, agreeable.
15						
26	7		10		54 5	1 12 W. Rain.
13						
27	4		8	5	51 1	W. Fair, cloudy.
13						
28	5		9	7	53 8	N. W. White frost, fair.
14	5					
29	10	5	15	3	66 4	1 10 S. Overcast, rain in the night.
20	3					
30	8		11	3	57 4	W. N. W. Very fair.
		Le deg. du plus gr. froid. 2 5	Greatest deg. of cold 37 6	3 9 12 Total of the fall of WATER.	Prevailing wind of the month W. 12 days.	TEMPERATURE OF THE MONTH. Very agreeable, and fa- vourable to the agri- culturist.
ESULT.			Greatest deg. of heat. 92 7	9 days of rain, 1 of thunder, & 4 of storm.		
		Var. 24 5	Var. 55 1			PREVAILING SICKNESSES. Pleurisy.
the 16th		Temper. 11 3	Temper. 57 4			
the 19th						

MAY, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrémes. deg. $\frac{1}{10}$ *0	Moyens. deg. $\frac{1}{10}$ *0	Degrees. Mean. deg. $\frac{1}{10}$ *0	Foot. In. $\frac{1}{12}$ $\frac{1}{16}$						
1	1	5	9 3	52 9		W.	White frost, fair.			
	17									
2	10	5	16 3	68 7	12	W.	Rain, fair, clear.			
	22	3								
3	11		17 5	71 4		S.	Very fair, clear.			
	24									
4	15		20	77	1 6	S. S. W.	Very fair, thunder storm in the evening.			
	25									
5	10	3	13 5	62 4		W.	Overcast, fair.			
	17									
6	7		11	56 7		W. N. W.	Very fair.			
	15									
7	2		9	52 2		W. N. W.	White frost, fair.			
	16									
8	8		11 5	57 9	9 2	S. E.	Fair, rain in the after- noon.			
	15									
9	13	5	16 7	69 6	3 7	S. W.	Rain, storm.			
	20									
10	6	5	12 7	60 6		W.	Fair, clear.			
	19									
11	12	5	17 5	71 4	2 4	S. S. W.	Foggy, rain.			
	22	5								
12	13		17 7	71 8	6 2	S. W. & E.	Overcast, rain.			
	22	5								
13	10		12 7	60 6		W.	Fair, clear.			
	15	5								
14	9	5	15	65 7		W.	Fair, cloudy.			
	20	5								
15	11		11	56 7	4 8	E.	Rain.			
	11									
16	8		9	52 2	7	E.	Overcast, rain.			
	10									
17	8		9	52 2	2 3	Var. W.	Rain.			
	10									
18	10		14 7	65 1		Var. W.	Cloudy.			
	19	5								
19	6		14 3	64 2		Var. W.	Foggy, fair, thunder, no rain.			
	22	5								

MAY, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

The first Observation made at Sun-rise; the second at two hours after Mid-day.											
Days of the month.	THERMOMETER.				UDOME- TER.	ANEMO- METER.	WEATHER				
	de Mr. De REAUMUR.		of FAHREN.				WATER of rain & snow.				
	Degrés. <i>Extremes.</i>	Moyens. deg.	Degrees. Mean.	deg.			Foot. In. $\frac{1}{12}$ $\frac{1}{16}$	Foot. In. $\frac{1}{12}$ $\frac{1}{16}$	Foot. In. $\frac{1}{12}$ $\frac{1}{16}$		
20	9		16 5		66 9		9 3	W.	Fair, cloudy, windy, thunder storm.		
21	24						1 5	W.	Cloudy, rain.		
22	10 5		15 3		66 4				Fair.		
23	20										
24	8		13 3		61 9						
25	18 5										
26	12		18 5		73 8						
27	25										
28	13		18 5		73 8						
29	24 5										
30	9 5		16 5		68						
31	22 5										
	8 5		15 7		67 3						
	23										
	8		15 5		66 9						
	23										
	8										
	28		16 3		68 7						
	3										
	24 5										
	11		16 5		69 1						
	22										
	9 5		14 3		64 2						
	19										
	4		10 5		55 6						
	17 3										
<hr/>											
RESULT.	the 1st	Le deg. de plus gr. froid. 1 5	Greatest deg. of cold. 35 4	Total of the fall of WATER.	5 3 14	Prevailing wind of the month.	TEMPERATURE OF THE MONTH.				
		Le pl. gr. deg. de chaud. 25 2	Greatest deg. of heat. 88 7				11 days of rain, 4 of thunder, & 4 of storm.	W. & S.	Variable, very vegeta- tive.		
	the 4th	Var. 23 7	Var. 55 6				PREVAILING SICKNESSES.				
		Temper. 14 4	Temper 64 4								

JUNE, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.			UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extrêmes. deg.	Degrs. Moyens. deg.	Degrees. Mean. deg.			
1	5	13	7	62	8	Fair.
	22					
2	10	16	7	69	6	Fair, cloudy.
	23	7				
3	13	19	7	76	3	Foggy, fair.
	26	5				
4	14	19	7	76	3	Cloudy, thunder, but little rain.
	25					
5	13	19		74	7	Very fair.
	24	5				
6	11	18	3	73	2	Fair, clear.
	25					
7	12	13		61	2	Rainy, overcast.
	14					
8	12	14		63	5	Rain.
	16					
9	12	15		65	7	Rainy.
	18	3				
10	11	14	5	64	8	Rain, thunder.
	18					
11	10	15	3	66	4	Very fair.
	20					
12	10	16	7	69	6	Very fair, clear.
	23	5				
13	10	18	5	72	5	Very fair, clear.
	27					
14	16	21	3	79	9	Fair, cloudy, thunder in the night.
	26	5			11	
15	17	22	7	83	1	Fair, cloudy, thunder in the night.
	27	7			1 0 14	
16	16	22	5	82	8	Cloudy, thunder.
	23				7 6	
17	16	21		79	2	Foggy, cloudy, thun- der.
	25	5			2	
18	17	20		77		E. var.
	23					Cloudy, thunder.
19	16	21		79	2	Very fair, clear.
	26					

JUNE, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.			UDOME-TER.	ANEMO-METER.	WEATHER of every day.
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extrêmes. deg.	Degrs. Moyens. deg.	Degrees. Mean. deg.			
20	17	22	3	82	2	W. Fair, cloudy, thunder, no rain.
	27	5				S. Fair, cloudy, thunder, no rain.
21	17	22	5	82	6	S. E. Fair, dry.
	28					
22	15	20	3	77	7	
	25	5				
23	17	19	7	76	3	2 7 S. E. Rainy, fair.
	22	5				
24	16	20	7	78	6	E. Overcast.
	25	5				
25	14	21		79	2	Calm & var. Foggy, fair.
	27	5				
26	16	19	5	75	9	N. W. Very fair.
	23					
27	10	15	3	66	4	N. W. Very fair.
	20					
28	12	18	3	73	2	W. Very fair.
	24					
29	15	21		79	2	W. var. S. Fair, cloudy.
	26	5				
30	14	18	3	73	2	N. Fair.
	22	5				
RESU LT.	the 1st the 16th and 21st	Le deg. du plus gr. froid. 5 5	Greatest deg. of cold. 44 4	2 7 8 Total of the fall of WATER.		TEMPERATURE OF THE MONTH. Very vegetative.
		Le pl. gr. deg. de chaud. 28	Greatest deg. of heat. 95	10 days of rain, & 8 of thunder.	Prevailing wind of the month. S. & S. W. var.	PREVAILING SICKNESSES.
		Var. 22 5	Var. 50 6			
		Temper. 18 7	Temper. 74 1			

Remarks.—The Cape and the white fox-grape in blossom on the second; the Burgundy on the fifth; the Malaga on the ninth; the grapes as large as peas on the 24th.—Rye harvest on the 28th.

JULY, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.			UDOME- TER.	ANEMO- METER.	WEATHER of every day.
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extrêmes. deg.	Degrees. Mean. deg.	Foot. In. $\frac{1}{2}$ $\frac{1}{16}$			
1	21 $\frac{5}{10}^{\circ}0$	18	72 5		N. var.	Fair, thunder, no rain.
2	24 5				W. N. W.	Very fair.
3	13	18 5	73 6			
	24					
3	14	20	77		S.	Fair, very dry, no dew.
	26					
4	16	22 3	82 2		S.	Fair, clear, no dew.
	28 5					
5	17 5	23	83 7		S.	Very warm.
	28 7					
6	19 5	24 7	87 6		S.	Hot, dry, no dew.
	30 3					
7	18 5	23 7	85 3		S.	Fair, hot, dry.
	29					
8	19	24 3	86 7		S.	Fair, hot.
	29 7					
9	21	25 3	88 9		N. N. W.	Very hot, clear.
	29 7					
10	18	21	79 2		S.	Cloudy at intervals.
	24					
11	14 5	20 5	78 1		S.	Cloudy, clear.
	26 5					
12	17 7	23 5	84 9		S.	Fair, thunder in the night, no rain.
	29					
13	20	24 5	87 1	8 7	S. S. W.	Hot, cloudy, thunder, rain.
	29					
14	19	22 7	83 1	5 7	Calm.	Rain, cloudy.
	26 5					
15	18 7	23 3	84 4		S.	Very fair.
	28					
16	19	24	86		S.	Fair.
	29					
17	18 7	23 7	85 3	1 14	S.	Fair, thunder storm at night.
	28 7					
18	15 7	20 7	78 6		W.	Fair, cloudy, windy.
	25 7					
19	16	20 7	78 6		W.	Very fair.
	25 5					

JULY, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME-TER.	ANEMOMETER.	WEATHER of every day.			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrêmes. deg. $\frac{1}{10}^{\circ}$ *0	Moyens. deg. $\frac{1}{10}^{\circ}$ *0	Degrees. Mean. deg. $\frac{1}{10}^{\circ}$ *0	Foot. In. $\frac{1}{12} \frac{1}{16}$						
20	16	21	79 2			W.N. W.	Very fair.			
21	15 5	20 3	77 7			E. S. E.	Very fair.			
22	14	19 5	75 9			E. S. E.	Thick fog.			
23	12 5	19 3	75 4			E. var. to S.	Very fair.			
24	18	23	83 1			N.	Cloudy, fair.			
25	15	20 5	78 1			N. N. W.	Cloudy, clear.			
26	14	20 7	78 6			S.	Cloudy, clear.			
27	7	20 7	78 6			N.	Fair, windy.			
27	16 5	20 7	78 6			N.	Fair, agreeable.			
28	15	20	77							
29	10 5	17 7	71 8			W. N. W.	Very fair.			
30	14	21	79 2			S.	Fair, dry, hot.			
31	16	22 7	83 1			S.	Fair, dry, hot.			
29 5										
RESULT.	the 29th	Le deg. de plus gr. froid. 10 5	Greatest deg. of cold. 55 6	1..3 12 Total of the fall of WATER.			TEMPERATURE OF THE MONTH! Very dry, vegetation suspended.			
	the 6th	Le pl. gr. deg. de chaud. 30 3	Greatest deg. of heat. 100 2	3 days of rain, & 4 of thunder.	Prevailing wind of the month S. 16 days.					
		Var. 19 8	Var. 44 6				PREVAILING SICKNESSES.			
		Temper. 21 9	Temper. 30 6							

Remarks.—Wheat harvest on the second, and oat harvest on the sixteenth of this month.

AUGUST, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>
	de Mr. De REAUMUR.		of FAHREN.				
	Degrés. Extrêmes. deg. $\frac{1}{10}$	Moyens. deg. $\frac{1}{10}$	Degrees. Mean. deg. $\frac{1}{10}$	*0	Foot. In. $\frac{1}{12}$	$\frac{1}{16}$	
1	17	20	77			E. to S.	Cloudy.
	23	3	/				
2	14	5	22		81 5	S.	Thick fog, fair.
	29	5					
3	17	5	22		81 5	7 14	E. S. E. Fog, cloudy, storm of thunder at eve.
	26	5					
4	17	5	22		81 5		W. N. W. Fair, cloudy.
	26	7					
5	15	5	20 5		78 1		W. N. W. Fair.
	25	5					
6	14		19 3		75 4		W. N. W. Fair, cloudy, alternately.
	25	5					
7	13		19 5		75 9		S. S. E. Very fair.
	26						
8	17	5	20 5		78 1		S. S. W. Overcast, cloudy.
	24						
9	16	5	22 3		82 2	2	S. S. W. Overcast, thunder.
	27	7					
10	17	5	21 7		80 8	S.	Cloudy, overcast:
	25						
11	17	5	22		81 5		W. S. W. Fair, hot.
	26	5					
12	16		21		79 2		S. W. Fair, hot.
	26						
13	21		24 7		87 6	1 1	W. S. W. Fair, rain.
	28	5					
14	17	5	21 7		80 8	S.	Fair.
	26						
15	18		22 7		83 1		S. W. Fair, cloudy.
	27	5					
16	21	5	24		86	W.	Fair, windy.
	26	5					
17	13		18 5		73 8	N. W.	Fair, agreeable.
	24						
18	11		18		72 5		W. N. W. Very fair.
	25						
19	13		19 5		75 9		S. S. W. Very fair.
	26						

AUGUST, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME-TER. WATER of rain & snow. Foot. In. $\frac{1}{12}$ $\frac{1}{16}$	ANEMO-METER. Prevailing WIND of every day.	WEATHER of every day.			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrêmes. deg. $\frac{1}{10}^{\circ}0$	Moyens. deg. $\frac{1}{10}^{\circ}0$	Degrees. Mean. deg. $\frac{1}{10}^{\circ}0$							
20	15	20 7	78 6			E. N. E.	Very fair and dry.]			
21	7	22 5	82 6			S.	Fog, fair, cloudy.			
22	5	23 5	84 9			S.	Fair, very dry.			
23	5	23 5	84 9			S.	Fair.			
24	5	23 7	85 3			S. S. E.	Fair.			
25	5	21 7	80 8			S. S. E.	Overcast, thunder in the N. W.			
26	5	22	81 5	2 12	W.		Cloudy, thunder.			
27	17	22 7	83 1			S.	Fog, cloudy.			
28	5	21 3	79 9	1 6 3	N. N. E.		Overcast, rain.			
29	5	21	79 2	9 6	W. S. W.		Rain, thunder.			
30	5	19 5	75 9			N.	Fair, cloudy.			
31	14 5	16 7	69 6			N.	Overcast, rain.			
RESUME.		Le deg. du plus gr. froid. 11	Greatest deg. of cold. 56 7	3 5 4 Total of the fall of WATER.			TEMPERATURE OF THE MONTH. Very dry.			
the 18th		Le pl. gr. deg. de chaud. 30 5	Greatest deg. of heat. 100 6	7 days of rain, & 5 of thunder.	Prevailing wind of the month S. & S.W.		PREVAILING SICKNESSES. Fever in Philadelphia.			
the 22d & 23d		Var. 19 5	Var. 43 9							
the 21st		Temper. 21 3	Temper. 79 9							

Nota. The Burgundy grape began to be ripe on the 18th.

SEPTEMBER, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month	THERMOMETER.			UDOME-TER.	ANEMO-METER.	WEATHER
	de Mr. De REAUMUR.		of FAHREN.			
	Degrés. Extrêmes. deg. $\frac{1}{10}$	Moyens. deg. $\frac{1}{10}$	Degrees. Mean. deg. $\frac{1}{10}$			
1	14	18	72 5			W. N. W Overcast, fair.
22						
2	12	18	72 5			N. N. W Fair, clear, agreeable.
24						
3	13	19	74 7			N. W. Very fair.
25						
4	13	17 3	70 9			S. E. Fog, cloudy, little rain.
21	5					
5	13 5	20 5	78 1			N. E. Fog, fair.
27	5					
6	16 3	21 7	80 8			S. S. W. Fog, fair.
27	5					
7	14 5	20 7	78 6			W. Fair.
27						
8	14 5	22	81 5			N. N. E. Very fair.
29	5					
9	17	19 5	75 9			N. N. E. Overcast.
22						
10	15	19 5	75 9			S. Overcast.
24						
11	15	21 5	80 4			S. & Very fair, clear.
28						
12	16 5	21 5	80 4			W. S. W. Very fair.
26	5					
13	15	15	65 7	4 8	E. N. E.	Overcast, rain.
15						
14	16	20	77	1 6 8	E. N. E.	Rain all day.
24						
15	18	22	81 5			W. var. Cloudy.
26						
16	16 5	21 3	79 9			S. W. Fog, cloudy, damp.
26						
17	18 5	20 7	78 6	2 6	E. var. to	Rain, fair.
23						
18	18	21 3	79 9			S. Cloudy and overcast,
24	5					thun. storm at 7, P. M.
19	16 5	20 5	78 1			Clear.
24	5					

SEPTEMBER, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrêmes. deg.	Degrees. Moyens. deg.	Degrees. Mean. deg.	Foot. In. $\frac{1}{12}$ $\frac{1}{16}$						
20	17	22	81	5		S. S. W.	Fair, windy.			
	27									
21	17	21	79	3		S.	Fair, aurora borealis at 9, P. M.			
	25									
22	8 5	14	63	5		S. & E.	Fair.			
	19 5									
23	11 5	15 5	66	9		N.	Rainy, cloudy.			
	19 5									
24	7	12 5	60	2		N.	Fair, cloudy, aurora borealis at 9, P. M.			
	18									
25	6	13	61	3		S.	Cloudy, fair.			
	20									
26	12 5	18	72	5		S. S. W.	Fair, windy.			
	23 7									
27	15	17 5	71	4		Var.	Fair, storm of wind at E. in the night.			
	20									
28	7 5	8	50		1	E.	Rain all day.			
	8 5									
29	5 5	7 5	48	8	11 14	N. N. E.	Rain.			
	9 7									
30	4 7	11	56	7		Var.	Fair, agreeable.			
	17									
RESDLT.	the 30th	Le deg. du plus gr. froid. 4 7	Greatest deg. of cold. 42 6	4 1 4 Total of the fall of WATER.	Prevailing wind of the month S.	TEMPERATURE OF THE MONTH. Temperate, pleasant.	PREVAILING SICKNESSES. Hooping cough.			
		Le pl. gr. deg. de chaud. 29 5	Greatest deg. of heat. 98 4	7 days of rain, 1 of thunder, without rain, & 2 of aurora borealis.						
	the 8th	Var. 24 8	Var. 55 8							
		Temper. 18	Temper. 72 5							

Note.—Grapes perfectly ripe the beginning of the month.

OCTOBER, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month	THERMOMETER.				UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>			
	de Mr. De REAUMUR.		of FAHREN:							
	Degrés. Extrémes. deg.	deg. $\frac{1}{10}^{\circ}$ *0	Degrees. Mean. deg. $\frac{1}{10}^{\circ}$ *0	Foot. In. $\frac{1}{12} \frac{1}{16}$						
1	4 5	11 5	57 9			Variable.	Very fair, clear.			
	18 5									
2	6 5	10 3	55 2			E. N. E.	Fog, overcast all day, rainy in the evening.			
	14									
3	9 7	11 7	58 3		14	W. N. W.	Fair morning, overcast and rainy afternoon.			
	14									
4	4	8 7	51 6			W. N. W.	Thick fog, fair, over- cast, cloudy, clear, alter-			
	13 5									
5	3 7	10 5	55 6			S. S. W.	Thick fog, cloudy and overcast alternately.			
	17									
6	8	10 5	55 6			W. N. W.	Fair, clear.			
	13									
7	2	7	47 7			N. N. W.	Frost, very fair, clear.			
	12									
8	5 - 0	7 3	48 4			Variable.	Frost, very fair, clear.			
	15									
9	3 5	10 3	55 2			W.	Fog, very fair, agreea- ble.			
	17									
10	9	13	61 2			Variable.	Fog, clear, overcast, and damp.			
	17									
11	12	18 5	73 6			S. S. W.	Fog, clear and hot.			
	24 7									
12	12 5	18 5	73 6			S. W.	Fog, very clear, agreea- ble.			
	25									
13	11	13 3	61 2			N. W.	Fair, agreeable, windy.			
	15 5									
14	2	10 3	55 2			S. W.	Fog, very fair, clear.			
	18 5									
15	7	15 5	66 9			S. S. W.	Fog, fair, clear, cloudy eve, & overcast all night.			
	24 5									
16	15 5	17	70 2	4	S. var. to E.		Rainy all day.			
	18 5									
17	15 5	17 7	71 8	5 6	N. W.		Heavy rain at sunrise, warm, clear, and agreea- ble.			
	20									
18	7	10 7	56 1			W. N. W.	Very fair, windy.			
	14 5									
19	5	9	52 2			W. N. W.	Very fair.			
	1									

OCTOBER, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.			UDOME-TER.	ANEMOMETER.	WEATHER of every day.
	de Mr. Ne REAUMUR.		of FAHREN.			
	Degrés. Extremes. deg.	Degrs. Moyens. deg.	Degrees. Mean. deg.			
20	2 5 11	6 7	47 1		N. N. E.	Overcast, cold.
21	2 9 5	5 7	44 8	2 7	Var. to E.	Overcast and rainy.
22	7 9	8	50	5	N. N. W.	Rainy, with snow.
23	5 14	6 7	47 1		S. to E.	Fog, frost, fair.
24	3 3 9	6	45 5	3	W. N. W.	Rainy, clear afternoon.
25	5 9	4 3	41 7		W. N. W.	Clear frost.
26	5 6	5 5	44 4	8 2	Var.	Overcast, rain, snow.
27	2 5 5	3 7	40 3		W. N. W.	Clear, very windy.
28	1 9	4	41		W.	Frost, fair, clear.
29	5 15	7 3	48 4		W.	Frost, clear, fair.
30	6 9	7 5	48 9		E.	Overcast.
31	6 13 5	10	54 5		W.	Fair, agreeable.
RESU.LT.	the 28th	Le deg. du plus gr. froid. 1	Greatest deg. of cold. 0	2 4 13 Total of the fall of WATER. 29 7		TEMPERATURE OF THE MONTH. Very fair and agreeable.
		Le pl. gr. deg. de chaud. 25	Greatest deg. of heat. 88 2	7 days of rain, & 2 of snow. Var. 58 5	Prevailing wind of the month W. N. W.	P.R.V.A.I.L.I.N.G SICKNESSES.
	the 12th	Var. 26	Temper. 54 3			
		Temper. 9 9				

NOVEMBER, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrêmes. deg. $\frac{1}{10}^{\circ}$ 0	Degrees. Moyens. deg. $\frac{1}{10}^{\circ}$ 0	Degrees. Mean. deg. $\frac{1}{10}^{\circ}$ 0	Foot. In. $\frac{1}{12}$ $\frac{1}{16}$						
1	8	10	5	55 6		S.	Fog, then clear, fair, and agreeable.			
	13									
2	12 5	16		68		W. S. W.	Very fine.			
	19 7									
3	8 5	12 7	6	60 6		W.	Very fair.			
	17 5									
4	7 5	11	7	56 7		W.	Very fair, agreeable.			
	14 7									
5	5	7 3	4	48 4		N. W.	White frost, fair, clear.			
	14									
6	1 0	6	5	45 5		W.	White frost, fair, clear.			
	13									
7	2 3	5 5	4	44 4		E.	Overcast.			
	9									
8	4 5	8 5	1	51 1		S.	Overcast, near calm.			
	12 5									
9	3	6	5	45 5	9 4	E.	Overcast all day, cold & damp, rain all night.			
	9									
10	9	9	2	52 2		N. W.	Cloudy morning, clear afternoon, cold.			
	9									
11	2 5	4 5	1	42 1		W. N. W.	Overcast morning, clear afternoon.			
	6 5									
12	3 5 0	4	1	41		W.	Frost, fair, clear.			
	11 5									
13	0	8	0	50		S. var. to E.	Frost, fair, clear, agreeable.			
	16									
14	5 5	8 5	1	51 1	8	Calm.	Rainy, thick fog.			
	11 5									
15	13 5	15 3	4	66 4	3 13	Calm.	Rainy, hot, foggy.			
	17									
16	1	6 5	6	46 6		W. &	Fair, cloudy and stormy even. snow in the night.			
	12					N. W.				
17	1 5	6 7	1	47 1		W.	Fair, cloudy.			
	12									
18	4 5	5	2	43 2		W. N. W.	Overcast, cold.			
	5 5									
19	1 3 0	2 7	1	38 1		W.	Frost, fair, clear morning, overcast afternoon.			
	7									

NOVEMBER, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME-TER.	ANEMO-METER.	WEATHER of every day.			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrémes. deg.	Degrees. Moyens. deg.	Mean. deg.	Foot. In. $\frac{1}{12}$ $\frac{1}{16}$						
20	3 5	4	41	4 10	N. E.	Rainy.				
21	2 5 10 3	6 3	46 2		Var.	Fair, clear, agreeable.				
22	1 5 6	3 7	40 3		W.	Rainy morn. wind variable, clear afternoon.				
23	5 8	4 3	41 7		E. S. E.	White frost, fair, clear; then overcast, cold.				
24	3 7 6	4 5	42 1	3 7	N. E.	Rain all day.				
25	2 7	4 5	42 1		N. N. W.	Very fair, clear.				
26	2 8	0 3	38 7		W.	Frost, clear.				
27	5 0 12	5 7	44 8		S. S. W.	Frost, clear, stormy wind at S. in the night.				
28	6 5 10 5	8 5	51 1		W.	Very fair, clear.				
29	0 13 5	6 7	47 1		S.	Frost, very fair, clear.				
30	7 18	12 5	60 1		S.	Very fair, wind stormy at intervals in the night.				
RESULT.	the 26th	Le deg. du plus gr. froid. 2	Greatest deg. of cold. 0	1 9 10 Total of the fall of WATER.	Prevailing wind of the month.	TEMPERATURE OF THE MONTH. 24 days of clear and very agreeable weather.	PREVAILING SICKNESSES.			
		Le pl. gr deg. de chaud. 19	Greatest deg. of heat. 74 7	5 days of rain, and 1 of snow.						
		Var. 21	Var. 47 2							
		Temper. 7 3	Temper. 48 4							

DECEMBER, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.			UDOME- TER.	ANEMO- METER.	WEATHER <i>of every day.</i>
	de Mr. De REAUMUR.		of FAREN.			
	Degrés. Extremes.	Moyens. deg. $\frac{1}{10}^{\circ}$ 0 deg. $\frac{1}{10}^{\circ}$ 0	Degrees. Mean. deg. $\frac{1}{10}^{\circ}$ 0			
1	5 8	6 5	7 7	47 44	1 8	W. N. W. Very windy, fair, and clear.
2	5	5	7	40	5	S. W. Frost, cloudy, windy, fair, agreeable.
3	1 8 5	0 3 3	7 7	38 52	1 2	W. Frost, fair, clear.
4	4 4	3 3	0 2	7 7	1 2	Calm. Frost, clear, very fair.
5	10 4 7	3 9	7 9	58 52	3 2	E. & S. S. E. Foggy, overcast, then cloudy.
6	10 13 3	3 3	11 3	7 3	3 3	Var. Overcast, rainy, barom. sinks much & suddenly.
7	6 10	5 3	8 6	3 3	3 2	N. N. W. Flying clouds.
8	3 9 5	3 5	6 6	46 45	2 5	W. Clear, very fair.
9	2 9 5	5 5	6 6	45 45	5 5	N. W. Clear, very fair, windy.
10	1 6	5 6	3 7	40 36	3 5	W. N. W. Frost, clear, very fair, windy.
11	2 7	-0 2	2 5	36 43	5 2	W. N. W. Frost, clear, very fair.
12	2 12	3 3	0 6	5 45	2 5	W. Frost, clear, very fine
13	3 13	-0 5	6 5	45 61	5 2	S. S. E. Frost, clear, very agreeable.
14	11 14	5 5	13 8	2 51	2 1	S. S. W. Rainy all day, thunder storm in N. W. at night
15	5 11	5 5	8 2	5 38	5 1	W. Clear, very fair.
16	5 5	5 5	2 7	1 7	W.	Frost, overcast, fair.
17	6 6	-0 3	3 3	38 38	7 7	W. Frost, clear, very fair.
18	3 10	5 3	0 7	47 47	1 1	S. Clear, fair, ground frozen.
19	2 14	5 5	8 5	51 51	1 1	S. Foggy, clear & very fair, st. of S. W. wind at night.

DECEMBER, 1805.

The first Observation made at Sun-rise; the second at two hours after Mid-day.

Days of the month.	THERMOMETER.				UDOME-TER.	ANEMO-METER.	WEATHER of every day.			
	de Mr. De REAUMUR.		of FAHREN.							
	Degrés. Extrêmes. deg. $\frac{1}{10}^{\circ}$ 0	Moyens. deg. $\frac{1}{10}^{\circ}$ 0	Degrees. Mean. deg. $\frac{1}{10}^{\circ}$ 0	Foot. In. $\frac{1}{12} \frac{1}{16}$						
20	10 7	12 3	59 7			W.	Clear, very fair.			
21	14 2	5 5	48 9			W.	Very fair, agreeable.			
22	12 5	8 3	50 7			S.	Fair, warm.			
23	15 3	10 3	55 2			W.	Fair, cloudy.			
24	10 5	8 5	51 1	10	W. N. W.	Rainy all day, bar. 29 inch 2-12, very low.				
	14 5	2 7	38 1			W.	Frost, fair, passing clouds			
25	1 4	5 5	33 6		W. N. W.	Frost, clear, fair.				
26	3 5	- 0	32			W.	Frost, clear, fair.			
27	4 5	0 0	38 7	1 11	E. N. E. to E. S. E.	Rain all day & night, bar. sunk in 36 h. In. 3-12.				
28	1 5	3	57 9		W.	Clear at sun-rise, then cloudy and windy.				
29	13 10	11 5	41 7		W. N. W.	Cloudy morning, clear afternoon.				
30	2 6	4 3	27 5		W. N. W.	Frost, clear, very windy.				
31	5 4	0 2								
JANUARY		Le deg. du plus gr. froid. 4 3 - 0	Greatest deg. of cold. 22 3	3 2 13	Total of the fall of WATER.		TEMPERATURE OF THE MONTH. Very agreeable.			
		Le pl. gr. deg. de chaud. 15 3	Greatest deg. of heat. 66 4	5 days of rain, 4 of storm of wind, & 1 of thunder.	Prevailing wind of the month W. & W. N. W.		PREVAILING SICKNESSES.			
		Var. 19 6	Var. 44 1							
		Temper. 6	Temper. 45 5							

Remarks.—Hottest day the 14th; its temperature 13 of Reaumur, or 61.2 of Fahrenheit. Coldest day the 31st; its temperature 2—0 of Reaumur, or 27.5 of Fahrenheit. A peach-tree on the terrace in blossom on the 29th.

**RESULT
OF ALL
THE METEOROLOGICAL OBSERVATIONS
Made at Spring-Mill, in the year 1805.**

THERMOMETER.

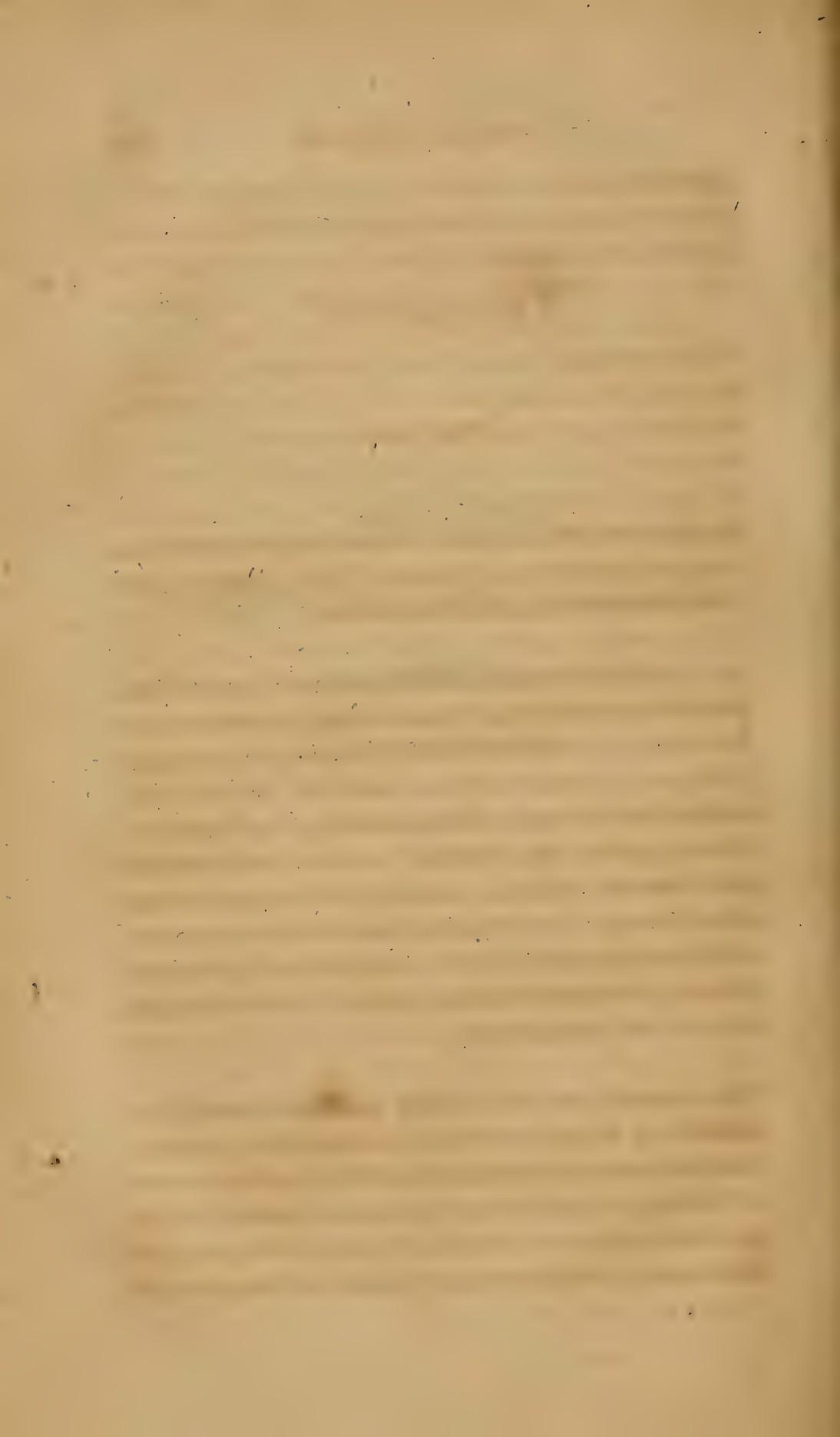
MONTHS.	Extremes of heat and of cold.				Variation.		Temperature.			
	RE'AUMUR.		FAHREN.		RE'AUM.	FAHR.	RE'AUMUR.	FAHREN.		
	deg.	$\frac{1}{10}$	deg.	$\frac{1}{10}$	deg.	$\frac{1}{10}$	deg.	$\frac{1}{10}$	deg.	$\frac{1}{10}$
January	15	5	-0	2	9	-0	29	5	66	4
	14			63	5				1	8 -0
February	12	5	-0	3	9		27	5	61	8
	15			65	7				2	36
March	5	3	-0	20	1		28	8	64	8
	23	5		84	9				7	1
April	2	5		37	6		24	5	55	1
	27			92	7				11	3
May	1	5		35	4		23	7	53	3
	25	2		88	7				14	4
June	5	5		44	4		22	5	50	6
	28			95					18	7
July	10	5		55	6		19	8	44	6
	30	3		100	2				21	9
August	11			56	7		19	5	43	9
	30	5		100	6				21	3
September	4	7		42	6		24	8	55	8
	29	5		98	4				18	
October	1		-0	29	7		26		58	5
	25			88	2				9	9
November	2		-0	27	5		21		47	2
	19			74	7				7	3
December	4	3	-0	22	3		19	6	44	1
	15	3		66	4				6	
January the 12th	Greatest deg. of cold.			Greatest deg. of cold.						
	15	5	-0	2	9	-0	46	103	5	11 5
August 22d & 23d	Greatest deg. of heat.			Greatest deg. of heat.						
	30	5		100	6					57 9

RESULT, CONTINUED.

MONTHS.	ANEMOMETER. Prevailing Winds.	DAYS OF STORM.			UDOME- TER.			TEMPERATURE of every month, or the prevail- ing weather.		
		rain.	snow.	rain.	WATER of rain & snow.	In.	$\frac{1}{2}$	$\frac{1}{16}$		
January	N. W. & W. N. W.	17		4	7	3	4	5	15	Very cold and snowy.
February	N. W.	22			2	4	2	8	14	Very fair, agreeable, whole- some.
March	Var. but N. N. W.	24	1	3	1	6	2	10	5	Very fair, dry, favourable, wholesome.
April	W.	19	1	4		9	3	9	12	Very fair, favourable to ag- riculture. Pleurisy prevail.
May	W. & S.	19	4	4	11		5	3	14	Variable, but very vegeta- tive, moist.
June	Var. but S. prevails.	20	8		10		2	7	8	Very vegetative.
July	S.	29	4		3	1	3	12		Very dry and hot, all vege- tables in sufferance.
August	S. & S. W.	24	5		7	3	5	4		Exceedingly dry.
September	S.	23	2	1		7	4	1	4	Fair. Yellow-fever in Phila. hooping-cough here.
October	W. N. W.	22			2	7	2	4	13	Very fair, agreeable, mode- rate. Hooping-cough.
November	W.	24			1	5	1	9	10	Very fair. Hooping-cough here.
December	W. & W. N. W.	25	1	4	5		3	2	13	Very fair, agreeable as in the spring.
										Temperature of the whole year.
	W. prevailing.	268	2	25	19	13	77	38	1	12
										French, or 40.6 inches English.
										Hot, dry, agreeable. Gar- dens, Indian-corn, buck- wheat in sufferance; no ap- ples; wheat and rye plenty. Pleurisy and hooping-cough the prevailing sicknesses here.

THE
PHILADELPHIA
MEDICAL AND PHYSICAL JOURNAL.

SECTION SECOND.



BIOGRAPHY.

I. *Anecdotes of LINNÆUS. Communicated to the EDITOR by NICHOLAS COLLIN, D. D., Rector of the Swedish Churches in Pennsylvania.*

AFTER being ordained for the Swedish Mission in North-America, I was anxious to improve my knowledge in Natural History, in order to promote a science so eminently useful to mankind, by the opportunities I would have; and, particularly, to benefit my native country, by procuring seeds of such valuable trees, shrubs, and plants, as might become naturalized to its climate. Accordingly, I destined the spring preceding my departure, in 1769, principally to this delightful study, communicated my design to LINNÆUS, and solicited his important aid.

He received me with cordial goodness, warmly applauded my views, gave me free access to the Botanic Garden, recommended me to his Son for a private course of lectures, and offered his personal assistance, on any particular subjects. Frequently was I favoured with his company, and those hours, among the happiest of

my life, are still fresh in my memory. Sublime instruction was joined with social friendship ; for his enthusiastic fondness of the science raised pupils, who loved it, to the rank of companions.

Those sentiments of piety, so well expressed in the introduction to the *Systema Naturae*, were habitual to Linnæus. He frequently impressed them upon the minds of his pupils, in the public lectures, and they often flowed through his private conversation. Particular occasions called them suddenly forth, in very sublime and pathetic strains of adoration. In one of our walks through the garden, we came to a beautiful young Ash, whose vernal leaves played in the beams of the evening sun. He stopped, and addressed the CREATOR in extatic admiration of his power, wisdom, and goodness.

Linnæus was charmed with the forms and colours that embellish the vegetable world, and regarded them as splendid proofs of the Divine Majesty. In that view, he displayed the beauties of some flowers to a numerous audience, for a good while, till they, in their turn, were satisfied, showing their incomparable superiority over the most elegant works of human contrivance.

His own sensibility to the beauties of Creation, it is probable, sharpened his contempt of those who had no relish for them. "They trample on the flowery meads," he would say, "like the grazing cattle." Judging that all men are, in duty, bound to contemplate the works of God, according to their talents and means, he deemed a

neglect of it, in the higher orders of society, very reprehensible; and as to Clergymen utterly ignorant of Natural History, he said, that such were ill qualified for their sacred function.

He firmly believed in the particular providence of God, and was very grateful for the many specimens of it to himself. Well persuaded that many dispensations of it cannot be developed in the present life, he also believed, that our happiness and misery on earth are frequently not only natural consequences of virtues and vices, but also brought about by that Providence, as rewards and punishments.

He sometimes conversed with me on the modes of preaching. His correct judgment, and natural gaiety, were incompatible with austere superstition. A clergyman, in the vicinity of Upsal, who had more zeal than wisdom, did not escape his wit. He once asked me, how I addressed my hearers? "The mildest appellation from that man," he said, "is beloved sinners."

The pious reflections so frequent in the writings of the Swedish naturalists, the liberal devotion of the clergy, and the rational principles of religion that prevail in the Swedish nation, are not a little owing to the influence of Linnæus. It was very extensive, because a great proportion of the students at Upsal attended some of his lectures, besides the votaries of natural history, and the candidates for medical degrees; and because numbers of other persons, who were well educated, were in the habit of reading more or less of his works.

This great man was still eager to augment the stock of knowledge which he had hoarded in, for so many years. He, therefore, thankfully received authentic facts from any persons, and, in matters of reasoning, paid attention to the arguments of others, however inferior to himself. His energetic mind could still support arduous meditations. He once told me, that a fruitless endeavour to explain an extraordinary phenomenon had kept him awake for two nights.

His evening of life was also enlivened by the usual flow of spirits, a gift from the God of Nature. His conversation was, on proper occasions, facetious, and he was pleased with decent mirth in others. This rendered him the more agreeable to the academic youth, and procured him festive compliments. The following fell under my own observation.

The first day of May has, for many centuries, been celebrated in Sweden, as the harbinger of spring, by a variety of rejoicings. The students of Upsal take a full share in these. On the evening of that day, in 1769, at a late hour, three hundred, or more, of them went to the house of Linnæus, and gave him a handsome salutation, with cordial wishes for the long life of a man so valuable to Sweden, and to the world. He rose from his bed, opened a window, thanked them heartily, and requested them to come in. On their declining to trouble him, he insisted on sending out wine and beer, for their refreshment: but they begged to be excused, as they had already drunk his health, in flowing bumpers, and bade him good night, with many a “**VIVAT LINNÆUS.**”

His country-seat, Hammarby, at the distance of three miles from Upsal, was cultivated and embellished in a manner worthy of the owner. A saloon, in the mansion-house, was covered all around with a tapestry, that represented numerous kinds of the most beautiful flowers, of all climates, in their true dimensions, forms, and colours. Among them, were those of the *Liriodendron*, *Magnolia grandiflora*, *Bignonia Catalpa*, and others of North-America. Linnaeus displayed this blooming map of the world, with great satisfaction, and said, that I would never, in my travels, behold such magnificent paintings, not even in royal palaces. On a rock, in a sequestered and shady place, was a solitary lodge, which contained all his works. These, in the several editions, and various elegant bindings, made a respectable library.

He set a high botanical value on North-America, as a country abounding in many kinds of stately trees, and fine shrubs; and as containing, in its yet unexplored vast regions, treasures for natural history, and regretted that he could never see it. In my farewell visit at Hammarby, he spoke much on this subject, and renewed the former injunctions to collect specimens of animals, plants, seeds, &c., for him. A few days afterwards, we met again, unexpectedly, in the library of the University. There he bade me the last farewell, with an affectionate embrace, and these words: “Remember me when thou comest into thy kingdom.” Being well acquainted with the Bible, he often quoted remarkable texts, and sometimes, in modes of allusion, both pleasing and instructive.

II. *Some Account of Mr. JOHN BANISTER, the Naturalist. By the EDITOR.*

MR. JOHN BANISTER was a native of England, but I have not been able to ascertain the precise place, or the time, of his birth. After making a voyage to the West-Indies, where he remained some time, he came to America, and fixed himself in Virginia, not far, it is believed, from James-Town, on James-River.

He appears to have been a man of great zeal, as well as knowledge. He was very industrious in his researches after the plants of the country, many of which he described, and even “ drew the figures of the rare species.” In the year 1680, he transmitted to Mr. Ray “ A Catalogue of Plants observed by him in Virginia.” This was published by the great English naturalist, in the second volume of his *Historia Plantarum*, p. 1928.

Banister’s Catalogue contains a very considerable number of plants, not a few of which had not been noticed before. His descriptions are generally correct, and sometimes elegant. They show him to have been an examiner of *living* plants; a botanist not of the *closet*, but in the *Hortus Dei*.

The Herbarium of this able botanist came into the possession of Sir Hans Sloane, who deemed it one of considerable consequence.

Mr. Banister's knowledge in natural history was by no means confined to the study of plants. He appears to have been an excellent entomologist. He meditated the publication of a work on the natural history of Virginia, for which Mr. Ray (one of the most competent judges) says he was every way qualified. But he did not live to publish the work, and it is somewhat doubtful whether he ever wrote any considerable part of it.

So far as I know, the following is a complete list of all Mr. Banister's publications, the Catalogue excepted. They appeared in the *Philosophical Transactions* of the Royal Society.

1. A Catalogue of several Curiosities found in Virginia.
No. 198. p. 667.
2. Observations on the Musca Lupus of Mouffet, in Virginia. No. 198. p. 670.—These observations relate to the balancers or poisers (called, by the scientific entomologists of the present time, *Halteres*), that are fixed under the wings of the insects of the Linnean order of *Diptera*.
3. On several Sorts of Snails observed in Virginia. *Ib.* p. 672.
4. A Description of the Pistolochia, or Serpentaria Virginiana, the Snake-root of the shops. No. 247. p. 467.—The plant here spoken of is the Aristolochia Serpentaria of Linnæus, well known in the United-

States by the names of Virginia Snake-root, Black Snake-root, &c.

The principal work of Mr. Banister is the catalogue already mentioned. Placed as this is, in the vast work of Mr. Ray, it is seldom seen, and little known. Even Haller, so far as I can find, does not refer to it, nor mention the author's name, in the *Bibliotheca Botanica**[†], a work peculiarly consecrated to the history of BOTANISTS. But Banister's merits were of a very superior kind. The great and good Mr. Ray has borne the most ample testimony to them[‡]. Mr. Lawson, too, in his work on Carolina, mentions him with much respect[‡]. Sir Joseph Banks, if I do not mistake, printed, some years since, a separate edition of the Catalogue, which he distributed among his friends.

"Banister increased the list of martyrs to natural history." But there are different accounts of the manner of his death. "In one of his excursions (says Dr. Pulteney), in pursuit of his object, he fell from the rocks, and perished." I have been informed, by one of his descendants, that he was killed by the falling of a tree, near the foot of which he was picking up a plant.

I have not been able to ascertain the precise time of Banister's death. He was, it is certain, living in the

* *Bibliotheca Botanica*, qua scripta ad Rem Herbariam facientia a rerum initiiis recensentur. Auctore Alberto von Haller. Tiguri: 1772.

† See note A.

‡ See note B.

year 1687, when he sent a small collection of seeds to Mr. Ray. These are mentioned in the *Historia Plantarum*, p. 1928. From the manner in which Mr. Lawson speaks of him*, I conjecture, that the Virginia naturalist was alive *very late* in the seventeenth century. Lawson went to Carolina in 1700, at which time, there can, I presume, be little doubt, that Banister was dead.

The name of Mr. Banister is honourably preserved in the enumeration of the vegetable kingdom. Mr. Houstoun, an able botanist, consecrated to him a genus of climbing plants (belonging to the tenth class), which had been ranked, by Sir Hans Sloane, and other botanists, as a species of Maple†. The distinction of Houstoun stood the test of the rules laid down by Linnæus, and accordingly is preserved in the sexual system. Twenty-four species of **BANISTERIA** are enumerated by Willdenow, in his edition of the *Species Plantarum* of Linnæus‡. Linnæus himself was acquainted with only seven species.

Many of the descendants of Mr. Banister are still living in Virginia, and are some of the most respectable inhabitants of that part of the Union. The editor of this work will gladly receive from them any further particulars of the life and labours of the great **BOTANIST**.

* See Note B.

† *Acer scandens*, &c.

‡ Tom. II. Pars I. p. 737—742.

NOTES ON THE PRECEDING PAPER.

Note A. page 136. Banister is called by Mr. Ray, “eruditissimus Vir et consummatissimus Botanicus.” *Historia Plantarum*, &c. tom. 2. p. 1928. In the preface to the same work, after mentioning, with great respect, the names of two of the illustrious botanists*, to whose labours he was greatly indebted in the composition of his History, he says, “ His adjungere licet et tertium, non minoris in Botanicis nominis & famæ, D. J. Banister, qui in India quam vocant Occidentali† idem stadium decurrit, et Virginiae, ubi nunc degit, Historiam Naturalem meditatur. Nemo certè hactenus ex nostra gente Botanicis scientiâ omniq[ue] literaturæ generi ei similis aut secundus in Novem Orbem pedem intulit, nemo omnibus requisitis ad talem Historiam conservendam paratior accessit.”

In the preface to the Supplement to his work, p. 4, the illustrious English naturalist pronounces the eulogium of Banister, in a still higher strain. The following are his words :

“ *D. Joannes Banister* primi subsellii Botanicus, Vir magni nominis et famæ, quem Historiæ hujus initio laudavimus, *Virginie* ubi per plures annos sedem fixit,

* Paul Hermann, and Henry van Rheeede.

† Dr. Pulteney says, Banister “first made a voyage to the East-Indies.” *Biographical Sketches*, &c. vol. 2. p. 55. But more dependence, in this respect, is to be placed upon Mr. Ray.

plantas mirâ industriâ indagavit et descriptsit, rariorésque propria manu ad vivum delineavit; infelici tandem et deplorando casu, antequam Històriam Naturalem istius provinciæ, quam præ manibus habuit, perfecerat, dum rupes incautius scanderet, rebus humanis exemptus est."

Note B. page 136. Mr. Lawson, after mentioning a good many of the plants of Carolina, says, "Had not the ingenious Mr. Banister (the greatest *Virtuoso* we ever had on the Continent) been unfortunately taken out of the world, he would have given the best account of the plants of America, of any that ever yet made such an attempt in these parts." A New Voyage to Carolina, &c. p. 78.

III. *Memorandums of the Lives and Literary Labours
of Mr. WILLIAM VERNON and Dr. DAVID KRIEG.
By the EDITOR.*

THE country of Maryland, which, considering its extent, is one of the richest fields for the exertions of the American botanist, was visited, towards the latter end of the seventeenth century, by two botanists, whose names are worthy of preservation in this work; one of the objects of which is to mark the *rise* and *progress*, and to display the *present condition*, of Natural History in the United-States. Of the lives of these botanists, however, only a few scanty and very imperfect materials are preserved.

MR. WILLIAM VERNON, fellow of St. Peter's-College, Cambridge, and DR. DAVID KRIEG, are the persons to whom I allude. They resided in Maryland for some time, how long I have not ascertained, and returned to Europe, "after having collected an *Herbarium* of several hundred new and undescribed plants." This collection, like that of Banister, came into the possession of Sir Hans Sloane, who was a kind of general *depot* of the botanical treasures of the time. Through the liberal communication of the British physician and naturalist, the names, &c., of the plants were inserted in the *Supplement* to Mr. Ray's History.

Mr. Vernon appears to have been something more than a mere COLLECTOR. Mr. Ray, who was, indeed, on all occasions, fond of rendering praise where it is due, speaks of him as a man both skilful and assiduous in the pursuit of the plants of his native country, and even mentions him as respectable for his knowledge of all the branches of natural history, besides botany. His discoveries in the vast, the difficult, and obscure class of Cryptogomia are said to have been numerous.

Schreber has consecrated to Vernon a fine genus of plants, belonging to the great class of Syngenesia. Of this genus (VERNONIA) there are several species in the United-States. The Serratula præalta, and the Serratula noveboracensis of Linnaeus are referred to this genus by Mr. Michaux*, who calls them Vernonia præalta, and Vernonia noveboracensis.

* Flora Boreali-Americanæ. Tom. II. p. 95.

Dr. Krieg was a native of Saxony. It is conjectured, “that after his return from Maryland, he retired into his native country*.” He was the friend and correspondent of Mr. Samuel Dale, a very respectable English practising apothecary and naturalist. In his *Pharmacologia*†, this writer acknowledges, in a very respectful manner, the notices which were communicated to him by Krieg. He even “ranks him among the few eminent men of the time, who excelled in the knowledge of the Materia Medica and Chemistry.” This commendation, it is probable, is rather high. The *MATERIA MEDICA* was, indeed, in a very wretched state when Dale published the first edition of his work, in 1693, and for a long time after. No artist, of superior talents, had yet arisen, to mould the noble science, or any part of it, into a regular or decent shape. This was to be the work of a later day. Krieg may have excelled, among the writers of his time, in the knowledge of the properties of the various (known) objects of the *materia medica*. But Dale ought not to have said, that the German physician was one of the few eminent chemists of the age. Chemistry was, indeed, at this period, in its infancy : but the science (or rather *Art*, for it did not, until a much later period, deserve the name of a science) was cultivated, with great zeal, and labour, and success, by many votaries at this period, particularly in Germany and in France.

The only chemical paper of Krieg’s, of which I have any knowledge, is entitled “An Account of Cobalt and the

* Dr. Pulteney.

† *Pharmacologia S. Manuductio ad Materiam Medicam:*

Preparation of Smalt and Arsenic," according to the process used at the mines of Shneebergh, in Hermunduria. This, accompanied with figures of the furnaces employed, was printed in the *Philosophical Transactions*, No. 293. vol. XXIV. p. 1754.

I have not been able to ascertain the particular parts of Maryland which were visited by Vernon and Krieg. It is highly probable, that Virginia was occasionally the theatre of their botanical excursions.

When Dr. Krieg died, I have not been able to learn. It is certain, however, that he was not living in the year 1737.

IV. LOGAN, CRESAP, and ROGERS.

THE publication of Logan's (supposed) speech, by Mr. Jefferson, in his *Notes on the State of Virginia*, has excited much of the public attention. This speech has been adduced to vindicate the character of the Indian, or Man of America, from the foul aspersions of certain European writers, who have ventured to assert, that Nature, in forming the animal productions of the new world, has laid aside her usual mastery; that she has formed, in other words, the animals of this portion of the earth upon a smaller scale; that she has armed them with a weaker or less glowing fire; and that she has given to the human inhabitants, in particular, less of that intellectual principle, which constitutes the proud pre-eminence of man, in the range of the animal world.

The speech of Logan has excited the attention of the public in another point of view. It has been said, that this eloquent *morceau* is the production of Mr. Jefferson, and not of Logan, or any other Indian : that he has imposed it upon the public as an original performance, as serving to establish his favourite theory, that Nature is as perfect in America, as in any other region of the earth. The political and other enemies of this distinguished citizen of America have, on many occasions, availed themselves of the supposed imposition, and have endeavoured to show, that no dependance is to be placed in the assertions and theories of a man, capable of thus mixing fable with history ; of thus defiling the pure springs from whence the historian, the naturalist, or philosopher, should draw the resources of his information.

It has been asserted again, but this, we hope, has seldom been believed, that Mr. Jefferson, by the publication of this speech, has indulged an aversion to the name and memory of Colonel Cresap ; whom, it is said, he has most cruelly dragged, as one of the most atrocious criminals, before the public ; and by thus connecting his name with a performance which will long be read with interest, —even when it shall cease to be considered as genuine,—has stamped his name with a species of detestation from every reader of American history ; from every one who is capable of a tender feeling, when he meditates upon the enormities, which, for more than three hundred years, have been committed by the Europeans, wherever they have formed, or attempted to form, establishments among the oppressed people of the two Americas.

I exceedingly regret, that the intellectual character of the Indian of North-America is so little understood, even by the best European and American writers on the subject. Surely, the history of the Mexicans; the progress which they had made in many of the useful, and some of the elegant, arts; their system of government; their code of morals*; should have secured this portion of the inhabitants of the new world from the calumnies which have been heaped upon them by Buffon, by De Pauw, by Robertson, and by other writers; writers, who, so far as concerns the physical and moral condition of America, have proved themselves utterly incapable of a candid or correct investigation of the subject†. And does not the history of the “Five-Nations,” to whom the French have given the name of *Iroquois*, furnish us with proofs of a correct acquaintance with the principles of an excellent form of government, calculated to ensure respect, and, for a long time, stability to its people?

With respect to the eloquence of the American Indians, it is certain, that specimens of this kind are by no means uncommon among them. For information

* See Clavigero’s History of Mexico.

† I hope to be able to publish, at some future (perhaps not early) period, my *Strictures on Dr. Robertson’s History of America*. For this work I am in possession of ample materials: these shall be preserved, though it is possible I may never be able to digest them into the order in which I wish them to appear. Yet, notwithstanding what I have said, I wish to be understood as entertaining a very high opinion of Dr. Robertson, as a writer.—My corrections of Mr. de Buffon (and, perhaps, of Mr. de Pauw) will be given to the public, in different works, at no very distant period.

on this subject, I refer the reader to the writings of Charlevoix, Carver, and other persons, who have travelled among the Indians. I have received from different sources, the purity of which I cannot doubt, Indian speeches, little, if at all, inferior in dignity of sentiment, in tenderness of expression, to the speech of Logan, as published by Mr. Jefferson. But I will not dwell any further on this part of my subject. I proceed to the more immediate object which I have in view.

But, before I do this, I think it my duty to declare, that I am firmly persuaded, that Mr. Jefferson is not the author of the speech which he has attributed to the "Mingo chief," Logan. I have no doubt, that he has published the speech as he received it, believing it, then, as I suppose he still does, to be the genuine production of an untutored Indian. Of these things I am fully persuaded, not merely from the ample body of testimony which Mr. Jefferson has published, relative to the supposed murder of Logan's family, by colonel Cresap; nor from the depositions of different persons, who declare that such a speech was sent by Logan to the Governor of Virginia: but from my knowledge of, and from my personal acquaintance with, the President of the United-States, I believe him to be wholly incapable of an im-
position so base and pernicious, and, I may add, so un-
necessary, as that which is attributed to him.

But there are good reasons to believe, that, by some person, or persons, great liberties have been taken with the speech of Logan (altering, and improving it); if, in-

deed, such a speech was ever sent by Logan. The following observations will show, that my suspicion is not without foundation.

In the course of my inquiries relative to this subject, I met with a small work, of about one hundred pages, entitled *New Travels through North-America: in a Series of Letters, &c., &c.* Translated from the original of the Abbé Robin; one of the chaplains to the French army in America.—This translation was printed at Philadelphia, in 1783*. The *original* work I have not been able to procure.

This little work has not, perhaps, any very high claims to the notice of the naturalist, the philosopher, or the historian. It is, however, worthy of perusal, and contains some facts, especially relative to the American revolution, which I have not met with elsewhere.

In the twelfth letter, the author gives the character of general Burgoyne. And in this letter, too, we find a speech of Logan, or, as Robin calls him, *Lonan*. It may be curious, besides giving the speech at large, to mention the manner in which it is brought forward by our author.

“ Burgoyne, formed by nature with an active, enterprising disposition, animated by a most extravagant love

* I had some acquaintance with the translator; but I was very young at the time; and now, at the distance of twenty-three years, I do not recollect his name. He was a Frenchman, who appeared to understand the English language very well.

of glory, a favorite, also, of the court of London, was furnished amply with the means of securing the most brilliant success. His army consisted of seven thousand one hundred and seventy-three regular troops, English and Germans, exclusive of a corps of artillery, and seven or eight hundred men, under the orders of colonel St. Leger: all his officers were men of approved merit, and he was provided with a considerable train of artillery and ammunition of every sort. Guy Carleton, governor of Canada, who had the care of furnishing the particular articles, forgot nothing that might contribute to the success of the expedition. The services this governor had rendered to the crown,—the preservation of Canada, which was owing to his exertions alone, and the perfect knowledge he had of the whole country, seem to have given him the best pretensions to the chief command, but he had a spirit great enough to make him forget this piece of injustice; and went so far in favour of his rival, as to consent to make treaties with the savages, tho' contrary to his own private opinion, and from them obtained a considerable body of Indians and warriors. The unsteady, capricious temper of these people (continues our author); their barbarous and bloody customs; their thirst for plunder; their infidelity in fulfilling their engagements, did not all hinder the English from making them the companions of their expected conquests: Burgoyne harangued them with an eloquent oration on the shores of Lake Champlain, calculated to inflame their courage, and restrain their barbarity. But what influence can eloquence have over

the minds of those men, who, in their whole language, have not two words to signify *equity* and *humanity**.”

In a note to the above, the author says, “The Spaniards have been reproached for exercising cruelties upon the inhabitants of the countries they conquered; but it appears, that reproaches of this kind are no less well founded against the English†.” He adds, in the same note,

“ An Indian speech, that was given me by a professor at Williamsburg, a translation of which is subjoined, is a proof of this. It discovers, at the same time, the bold and masculine energy with which these savages are taught by nature to express themselves.” Then follows the speech, which is entitled,

“ Speech of the Savage LONAN, in a General Assembly, as it was sent to the Governor of Virginia; anno 1754.”

Lonan's Speech, from the Abbé Robin. *Logan's Speech, from Mr. Jefferson.*

“ LONAN will no longer oppose making the proposed peace with the white men—you are

“ I appeal to any white man to say, if ever he entered LONAN's cabin hungry, and he gave

* We could show, if this were the proper place for the inquiry, that the Indian languages are not wholly destitute of words somewhat equivalent to those which are here mentioned. EDITOR.

† The Abbé, it seems, is very partial to his own countrymen. There are, upon record, instances of great cruelty practised upon the Indians, in some parts of North-America, by the French.—

EDITOR.

sensible that he never knew what fear is—that he never turned his back in the day of battle—no one has more love for the white men than I have. The war we have had with them, has been long, and bloody on both sides—rivers of blood have ran on all parts, and yet no good has resulted therefrom to any—I once more repeat it—let us be at peace with these men; I will forget our injuries, the interest of my country demands it—I will forget—but difficult indeed is the task—yes—I will forget—that Major Rogers cruelly and inhumanly murdered, in their canoes, my wife, my children, my father, my mother, and all my kindred.—This roused me to deeds of vengeance!—I was cruel in despight of myself—I will die content if my country is once more at peace; but when Lonan shall be no more, who, alas, will drop a tear to the memory of Lonan*!"

him not meat; if ever he came cold and naked, and he clothed him not. During the course of the last long and bloody war, Logan remained idle in his cabin an advocate for peace. Such was my love for the whites, that my countrymen pointed as they passed and said "Logan is the friend of white men." I had even thought to have lived with you, but for the injuries of one man. Col. Cresap, the last spring, in cold blood, and unprovoked, murdered all the relations of Logan, not sparing even my women and children. There runs not a drop of my blood in the veins of any living creature. This called on me for revenge. I have sought it: I have killed many: I have fully glutted my vengeance. For my country, I rejoice at the beams of peace. But do not harbour a thought that mine is the joy of fear. Logan never felt fear. He will not turn on his heel to save his life. Who is there to mourn for Logan?—Not one†."

* * * * *

* New Travels, &c., p. 67.

† Notes on the state of Virginia; written in the year 1781, &c., &c. The original edition, pages 116, 117.

Having thus exhibited to the view of the reader the two speeches, copied, with the most scrupulous care, as I find them in the two works, which I have mentioned, it may seem altogether unnecessary to say any thing further on the subject. The resemblances and the differences between these specimens of oratory will *immediately* strike the eye of the reader. He will, perhaps, be shocked, as I myself have been, at this new instance of the fallacy of testimony, of the uncertainty of history, or the treachery of relators. But this subject, in itself, perhaps, not very important, deserves a more attentive investigation, by reason of the interest which it has already produced in the public mind ; and because the speech attributed to Logan, as we receive it from Mr. Jefferson, will be read, with delight (by Americans at least), for a long time ; perhaps so long as the English language shall be the pride of the people of the United-States.

Even in a historical point of view, the subject demands an investigation. It is the duty of every lover of truth to erase from the annals of his country every error, however small, by which they are disfigured ; and to show, that an unexpected light may often burst in upon us, even after the lapse of many years, to place events in a better point of view ; and to expose the base and vicious conduct of those who have dared, with hardy hand, to defile the hallowed page of history.

Before I proceed to inquire, whether the family of Logan were murdered by Colonel Cresap, or by Major Rogers : whether this event took place in 1754, or 1774,

I shall examine (unnecessary as it may seem to do this) the two speeches, exhibiting their vast and essential differences, and their slender resemblances to each other.

The opening of Logan's speech, as published by Mr. Jefferson, is truly beautiful. I hardly know any thing, of the same kind, and within the same compass, that is more so. It would not have disgraced one of Ossian's heroes, in the days of Fingal*. Not Tacitus himself could have formed a finer sentence for a British chief†. “I appeal to any white man to say, if ever he entered Logan's cabin hungry, and he gave him not meat; if

* Notwithstanding what has very recently been said upon the subject of the poems of the Caledonian bard, I think that we may still, with safety, say with Mr. Gibbon: “Something of a doubtful mist still hangs over these Highland traditions; nor can it be entirely dispelled by the most ingenious researches of modern criticism.” *The History of the Decline and Fall of the Roman Empire.* Vol. I. p. 145. Philadelphia edition. If I do not greatly mistake, the time is not very distant, when we shall all believe, that Ossian no more sung such poems as those which Mr. Macpherson has published, than that Logan composed the speech which every one admires in the *Notes* of Mr. Jefferson. For philosophers, it is not necessary to “indulge the pleasing supposition, that Fingal lived, and that Ossian sung.”

† See the speech of Galgacus, in the *Germania* of the Roman historian. I do not assert, that Tacitus was in the habit of fabricating speeches for his chiefs, his emperors, &c. But this is believed by Dr. Whitaker; and what this very learned writer has said on the subject, deserves the attention of every one, even of the greatest admirers of Tacitus. See Whitaker's *Review of “Gibbon's History,” &c.* p. 4—12. London: 1791. But Tacitus has not yet, I think, been proved to be criminous.

ever he came cold and naked, and he clothed him not."

In the Abbé Robin's edition of the speech, we have nothing like this, unless, indeed, some bold critic should fancy that he sees a resemblance in these tame and feeble words : " No one has more love for the white men than I have." Perhaps, it may be thought, that this sentence bears some resemblance to the following words, in the speech of Logan : " Such was my love for the whites, that my countrymen pointed as they passed, and said, ' Logan is the friend of white men.' "

The second paragraph in Mr. Jefferson's edition is as follows : " During the course of the last long and bloody war, Logan remained idle in his cabin, an advocate for peace."

The Abbé's Lonan says nothing about the last war ; nothing about his remaining idle in his cabin ; nothing of his having been an advocate for peace.

" I had even (says Logan) thought to have lived with you, but for the injuries of one man." — In vain do we look for any thing like this in the speech of Lonan.

" *Colonel Cresap*, the last spring, in cold blood, and unprovoked, murdered all the relations of Logan, not sparing even my women and children." So we have it in Mr. Jefferson's edition. In the Abbé Robin's translation, it is as follows :

“ Major Rogers cruelly and inhumanly murdered, in their canoes, my wife, my children, my father, my mother, and all my kindred.”

Logan tells us, that the murder was committed in the spring: Lonan does not tell us at what season the event happened. In Lonan we read of canoes: but neither canoes nor boats of any kind are mentioned by Logan. Perhaps, the person, who fabricated the speech which Mr. Jefferson has given us, did not think the word “canoes” sufficiently poetical, and may, therefore, have suppressed it.

Logan says, that Cresap murdered all his relations, not sparing even his women and children. Lonan is more particular. He says, that Rogers murdered his wife, his children, his father, his mother, and all his kindred. But in default of more precise information concerning the persons murdered, the fabricator of the speech in the *Notes*, puts the following words in the mouth of Logan: “ There runs not a drop of my blood in the veins of any living creature.” There is nothing that bears the most distant resemblance to this much admired passage, in the speech of Lonan.

“ This (Logan says) called on me for revenge. I have sought it: I have killed many: I have fully glutted my vengeance.”

We now, almost for the first time, begin to discover any resemblance between the speeches of Logan and Lonan. The latter says, “ This roused me to deeds

of vengeance ! I was cruel in despight of myself." But he does not tell us, that he " killed many ;" nor does he appear so much in the light of a brutal soldier, as in the person of Logan, who says, " I have fully glutted my vengeance."

" For my country, says Logan, I rejoice at the beams of peace." This is a beautiful passage. We find three passages which bear some resemblance to it, in the speech of Lonan. It opens thus : " Lonan will no longer oppose making the proposed peace with the white men." Afterwards, " I once more repeat it—let us be at peace with these men." And, finally, in the style of a Christian warrior : " I will die content, if my country is once more at peace."

" But do not harbour a thought that mine is the joy of fear. Logan never felt fear. He will not turn on his heel to save his life." The resemblance to this in the Abbé Robin's edition is not inconsiderable. Lonan says of himself : " You are sensible that he never knew what fear is—that he never turned his back in the day of battle."

It is worth observing, that in Mr. Jefferson's edition of the speech, what Logan says in defence of his character as a brave man, occurs towards the very end of the speech : in the speech of Lonan, on the contrary, the words " you are sensible that he never knew what fear is," form the second paragraph of the speech. Even this circumstance seems to show, that great liberties have been taken with the Indian speech, by differ-

ent persons. But this variation may not be deemed of much consequence by those who conceive, "that *history* is, entirely, a mere tissue of *fables*," and therefore think it of no consequence to labour to preserve its sacred purity.

"Who is there to mourn for Logan?—Not one." "But when Lonan shall be no more, who, alas, will drop a tear to the memory of Lonan!" The resemblance between these two paragraphs is considerable. The passage in the Abbé Robin's edition is, in my opinion, much the finest. I will not venture to assert, which of the versions is the most correct. But I must say, that the words of Logan are more in the *Indian* style,

Such are the principal (but by no means the only) differences between the speeches of Logan and Lonan. Others will immediately be seen by an inspection of the two columns. Will it be possible for any one, after viewing these speeches, and carefully comparing them together, to hesitate in believing, with me, that by some person, or persons, great liberties have been taken in altering the original speech of Logan? if, indeed, such a speech was ever made, or sent, by Logan.

But it will be said, that the speech of Lonan, as given to us by the Abbé Robin, is only a *translation*: that the Abbé received it in English; that it was translated into French*; and that, finally, it was turned into

* The Abbé does not say that he made the translation: he only says, that he "subjoins" a translation.

English from that translation. This, certainly, gives us room to doubt, whether the accuracy of the English translation in the *Travels*, to which I have referred, can be depended upon: for the licence or carelessness of translators is often monstrously great; and it has been observed (with what truth I will not pretend to say), that the French, in general, translate with less fidelity than most other people.

The Abbé says, that the speech was given to him “by a professor at Williamsburg.” It may still be in our power to discover the name of the professor. Should this be done, the obscurity which hangs over this subject may all be removed: we shall be able to determine, whether it was LOGAN or LONAN who sent the speech; whether it was CRESAP or ROGERS who murdered the family; and whether the event took place in 1754, or in 1774. We shall, perhaps, be able to discover the *first* edition of the speech, and to ascertain how much, and what part, of it was dictated by the *Mingo chief*; how much, and what part, was written *for him*, at a subsequent period (perhaps, at several periods), by other persons. Meanwhile, I am irresistibly led to believe, that the speech from which the Abbé Robin translated the specimen which he has given us, must,—independently on the names of the parties concerned; independently on the time at which the event is said to have happened,—must have been EXTREMELY UNLIKE the speech attributed to Logan, in Mr. Jefferson’s *Notes*. I am even persuaded, that a large proportion of those who candidly read this statement will unite with me in sentiment on this subject.

I now proceed to make some remarks on the more purely HISTORICAL part of this subject.

In Mr. Jefferson's *Notes*, the Indian chief, whose name is consecrated to a kind of immortality, is called LOGAN. By the Abbé Robin he is called LONAN. Thus the name occurs *four* different times in the same page of the Abbé's work.

But this difference is not, perhaps, of much consequence in our view of the subject. It is possible, that the same chief may, among different persons, have been called both Logan and Lonan. I think instances of this nature are not uncommon among the Indians. It is probable, that in the edition of the speech which the Williamsburg professor gave the Abbé, the name was Lonan : or, admitting that it was Logan, it was easy for a Frenchman to change it into Lonan. Instances of such carelessness are very common among the French writers*. I must confess, however, that to me Lonan sounds more *Indian-like* than Logan.—But it is very certain, that there was such an Indian chief as Logan.
OF LONAN, I KNOW NOTHING BUT WHAT I FIND IN THE WORK OF THE ABBÉ ROBIN.

* I might, perhaps, mention several exceptions to the truth of this observation: but I will content myself with mentioning one, and the more so, because I often find myself obliged to differ from him in sentiment, in regard to the questions which he has touched on in his American travels: Mr. Volney is the author I allude to.

A second, and perhaps more essential difference in the statements of Mr. Jefferson and the Abbé, relates to the time in which the supposed murder is said to have been committed upon the family of Logan and Lonan. Mr. Jefferson confidently refers the event to the year 1774, in the autumn of which year Logan is said to have sent the speech to be delivered to Lord Dunmore*.

The Abbé Robin refers the speech of Lonan to the year 1754; that is twenty years earlier than the period at which Logan is said to have transmitted his speech to Lord Dunmore. As I am not in possession of the original work of the Abbé, I cannot pretend to say, that the date is the same in this and in the translation made at Philadelphia. It is probable, that an error may have crept into the translation. It is not improbable, that the Abbé himself has committed a mistake: or possibly the date was 1754, in the copy which was handed to him at Williamsburg.

We should not, for a moment, hesitate to believe, that the copy communicated to Robin, and perhaps his own work, referred the event to 1774, if it were not for other material historical points, one † of which has already been mentioned, in which the two speeches differ from each other. It may be observed, however, that the year 1754 was, as well as the year 1774, a time of war and trouble, during which murders of the Indians by the whites, and murders of the whites by the Indians,

* See Notes, &c., pages 115, 116.

† The name of the Indian chief.

were extremely common in those very tracts of country, which, in the last mentioned year, were the theatre of the brutal achievements of a chief called Logan, and of many other Indian chiefs; of the still more brutal achievements of many a *white* warrior, whose names are preserved, in savage glory, in the *news-papers* of those times.

But Mr. Jefferson himself has dropped an expression, which would lead one to suppose, that the event referred to, in the speech of Logan, happened previously to the year 1774. “ Of the genuineness of that speech (says the President) nothing need be said. It was known to the camp where it was delivered : it was given out by Lord Dunmore and his officers ; it ran through the public papers of these states ; was rehearsed as an exercise at schools ; published in the papers and periodical works of Europe ; and all this, a dozen years before it was copied into the *Notes on Virginia**.” Now the *Notes on the State of Virginia*, as Mr. Jefferson himself informs us, were “ written in the year 1781, somewhat corrected and enlarged in the winter of 1782,” and were printed in the latter year. The original edition, with the imprint of 1782, is now before me. This edition contains the speech of Logan. From Mr. Jefferson’s statement, then, it would seem, that the speech had been published as early as 1770 ; that is, four years before the time at which the family of Logan is said to have been murdered by Cresap !

* See Appendix relative to the murder of Logan’s family,

Such is the monstrous confusion in which this simple historical point is involved ! I will only, in this place, add two observations relative to the *date* of the speech :

First. It is most probable, that the expression used by Mr. Jefferson, "a dozen years" was made entirely from *memory*, without any special reference, at the time, to authentic *notes*, or *documents*. Could he have been certain, that a speech such (or nearly such) as he has published in his *Notes* had appeared in any of the public prints, or before the public in any other shape, prior to the year 1774, he would not, for a moment, have hesitated to conjecture, that the name of CRESAP was an interpolation, by some person who was hostile to the character of this gentleman ; or by some person who was anxious to preserve his own reputation, from the indignant censure of the public, at the expence of another's.

Secondly. It is certain, that Colonel Cresap was an active officer in the year 1774, at the very time when the disturbances between the Indians and the whites were so great, and so alarming. This fact being ascertained (and we shall afterwards see that it is ascertained), a rash, or rapid inquirer might think it safe to conclude, that the speech, admitting it was ever sent, was sent in 1774. But this question is much more difficult than may, at first sight, appear.

I come now to by far the most essential point of difference in the *historical* view of the speeches of Logan and Logan. This is the most difficult part of the ques-

tion that I have to treat; and, perhaps, it will not be easy to discuss it, without wounding the feelings of the friends of some of the persons whose names I am to mention. I am far from intending to do this. I was a child in 1774: of Cresap, or of his family, I knew nothing until eleven years after this period*: I have no enmity towards them: it is probable that they have never heard of me. In regard to Cresap and his relations, therefore, I may be supposed to be not incapable of discussing the question in a friendly, and dispassionate, if not in an able, manner.

A Major Rogers was the friend of my father. I was not born until many years after the date of Lonan's speech: with this major, who, I believe, is now dead, I never had any acquaintance. Of his friends I know nothing. Of Cresap and of Rogers, therefore, I may say, what Tacitus says of three of the Roman emperors:

* When I was at the small village of Old-Town, or as it is commonly laid down in the maps by the name of "Cresaps," near the river Potomack, in Maryland, in the month of May, 1785, I lodged next door to a Colonel Cresap. This gentleman had once been a distinguished warrior against the Indians; he still, I was told, retained an aversion to the INDIAN name, and was now blind, and more than one hundred years old. This Colonel Cresap was, unquestionably, a member of the *same family* as the Cresap who fought against the Indians in 1774; but I do not suppose, that he was the same person; probably he was the FATHER of the Cresap whom Logan accused of destroying his family, and the Cresap who is often mentioned in the history of the Indian wars of 1754, 1755, &c.

“ Mihi Galba, Otho, Vitellius, nec beneficio nec injuria cogniti*.”

The remainder of this paper will be given in the next number of the Journal.

V. *Tribute to the Memory of Doctor THOMAS WALMSLEY. By the EDITOR.*

DR. THOMAS WALMSLEY was a native of Pennsylvania. He was born in the county of Philadelphia, at the distance of about fifteen miles from Philadelphia, in the year 1781.

Descended from a respectable English family, which had long been settled in this country, blessed with parents who were moral and virtuous, and knew the value of education, the early instruction of young Walmsley was not neglected. He passed through the ordinary course of English schooling, and afterwards acquired a knowledge of the principles of the Latin, and some knowledge of the Greek, language.

At the age of nineteen, he began the study of medicine, under the direction of a respectable physician in the vicinity of his birth-place. His studies, in the latter part of his time, were entrusted to the writer of this tribute, whom he selected, from many others, as his preceptor, that he might enjoy, along with the advanta-

* Hist. lib. I. cap. I.

ges of medical instruction, an opportunity of acquiring a knowledge of the principles of NATURAL HISTORY and BOTANY, sciences to which he had manifested a strong and early predilection, and for the improvement of which Nature had bestowed upon him, not only the requisite talents, but also that ardent and ambitious zeal, which is so necessary for the extension of these amiable and important pursuits of the philosopher.

In the month of June, 1803, he received the highest medical honours of the University of Pennsylvania : the degree of Doctor of Medicine. On this occasion, he defended an admirable inaugural dissertation, *On Glandular Appetency, or the Absorption of Medicines.*

This dissertation will long be referred to, as containing an extensive body of original facts, the result of many experiments, conducted with great labour, and the most patient zeal. The author has endeavoured to show, that some of those medicinal articles which have been supposed, by many writers, to pass from the stomach and intestines into the mass of blood, are never carried into the course of the circulation, but produce all their effects upon the solids. In this theory, he had, it is true, been preceded by other writers, particularly by Dr. Hodge, in his excellent inaugural dissertation, published at Philadelphia, in 1801*. But the dissertation of Walmsley is pregnant with new matter : the facts which it contains will make an irresistible impression upon the mind of an ingenuous reader, even though

* Experiments and Observations on the Absorption of Active Medicines into the Circulation. By Benjamin G. Hodge.

he may not adopt all the author's speculations, and conjectures, which, however, will be acknowledged to possess much ingenuity, even when they shall be found to be destitute of the advantage of a solid and immovable basis.

Not long after he had finished his medical studies at Philadelphia, Dr. Walmsley fixed himself as a practitioner of medicine at Chambersburg, the county-town of Franklin, in Pennsylvania. Here he soon acquired the confidence of many of the most respectable inhabitants of this place, and of the neighbourhood. He was respected for his talents and assiduous attention to business, and beloved for the amiable and engaging dispositions of his heart. He, consequently, entered upon a scene of business, both honourable and lucrative. In the autumn, however, of 1805, he left Chambersburg, having, in consequence of the recommendation of one of his friends*, been invited to Elizabeth-town, in the county of Washington, in Maryland. Here he was so fortunate as to receive, as he merited, the patronage of an able and experienced practitioner of the place, Dr. Samuel Young, who, considerably advanced in life, and with a delicate state of health, had sought a partner in the arduous fatigues of professional business.

Dr. Walmsley's situation, in his new place of residence, was truly enviable. He enjoyed the society, the friendship, and affections, of many of the most respectable inhabitants of the county, and he found himself engaged in an extensive scene of professional business.

* The writer of this tribute.

Had he lived, he would, undoubtedly, have assumed one of the most respectable stations, as a practitioner of medicine, in the United-States.

But the frequent lot of genius and of virtue is, in the language of the poet, “an early grave.” Dr. Walmsley’s constitution was naturally delicate: it was not to be improved by the sedentary habits of a student, or by the active exertions of a physician. In the month of February last, his health was visibly on the decline; but he continued to attend to his business, until about the middle of July, when he was obliged to confine himself to his room.

He now laboured under a fever of the remitting form, with an affection of his lungs. His friends and physicians were not ignorant of the dangers of his case. He had all the attention and assistance which talent and affection could bestow upon him. But their attention and assistance were fruitlessly applied. After a very painful illness of four weeks, he expired on Friday, the 15th of August, in the twenty-fifth year of his age.

Few young men have passed through life more generally beloved and esteemed, by those who knew him, than Dr. Walmsley. The endowments of his mind were of the higher kind. He was blessed with genius: he was a stranger to the weaknesses or the vices which too frequently accompany it. His imagination was vivid: his judgment strong and correct; his memory respectable. His zeal for the improvement of his profession, and the sciences most immediately connected with it,

knew no bounds. Hence, in the intervals of professional business, he devoted not a little of his time to the cultivation of his favourite studies, Natural History, Botany, and Chemistry. Such, indeed, were the ardour and success of his application to these studies, that there were, perhaps, very few young practitioners of medicine, in the United-States, who were more intimately acquainted with the sciences which have been mentioned than Dr. Walmsley.

Besides his inaugural dissertation, Dr. Walmsley wrote several papers, which, though small, are not destitute of value. His "observations on the external employment of the bark of the *Tilia americana*, or American Lime-tree, in cases of burns and scalds," is published in the second part of this *Journal**. This paper may be read with much advantage. He also communicated "a case of Pya!ism (apparently) produced by the external application of the lunar caustic, or nitrate of silver†." It is impossible to read this case without lending our full assent to the author's doctrine, that impressions made upon the solids, and communicated from one part of the body to another, are sufficient to account for many of the phenomena, which have been, in general, supposed inexplicable upon any other principle, than on that of an absorption of medicines.

But these essays constituted only a small part of the author's labours. He engaged in an analysis of the limestones of the rich and beautiful valley in which he

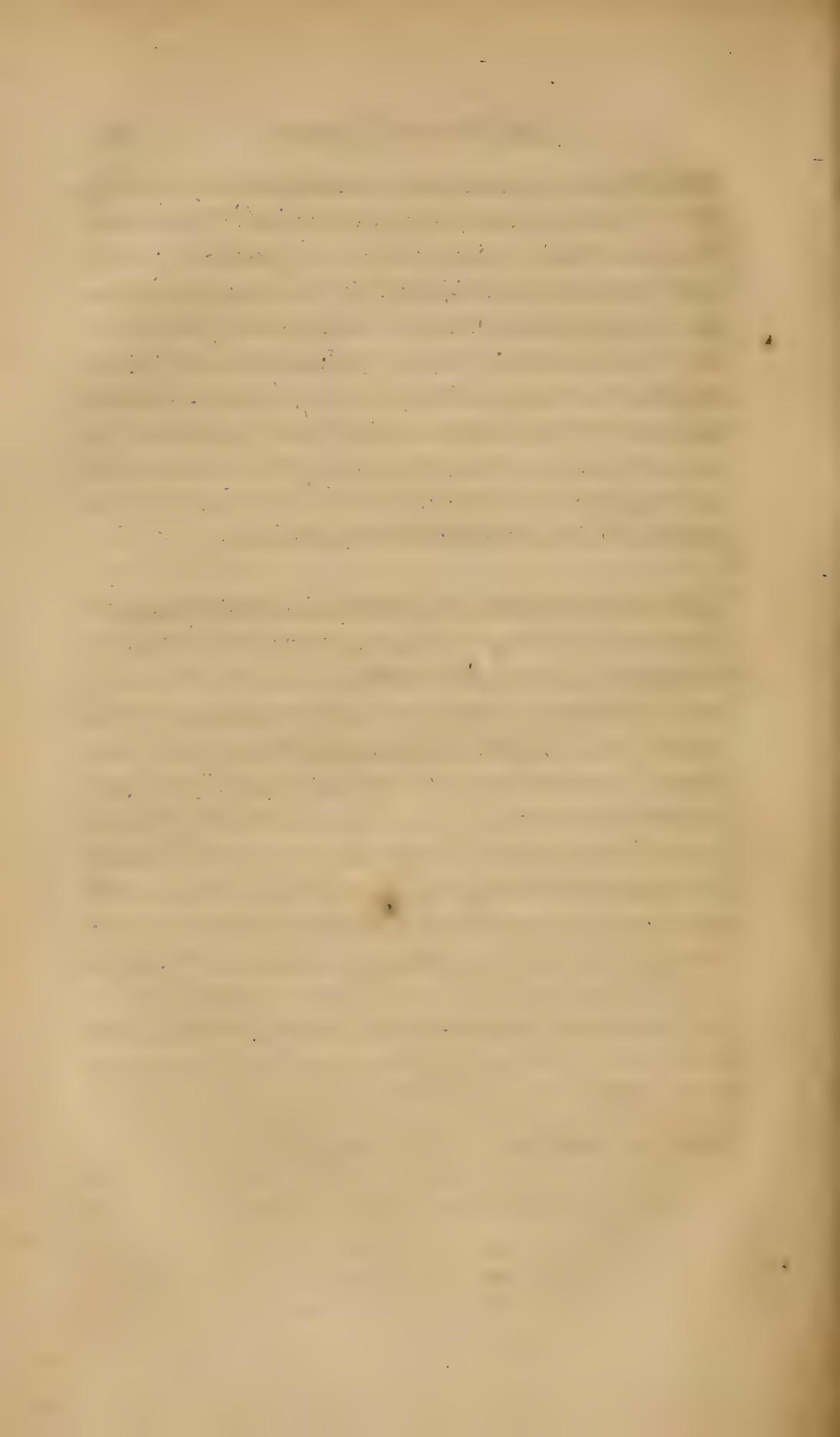
* Article IV. page 34—37.

† See Part I. Vol. II. Article XX. p. 117—119.

lived ; he drew up a very ample account of the remitting fever of 1804, in connection with a curious *Calendarium Florae*, which the writer of these pages has seen ; and, in the latter months of his life, he was engaged in a series of experiments relative to the nature of the light of the North-American species of Lampyris, and other subjects of the natural history of these insects*. These papers he did not live to finish : but it is hoped that parts of them are sufficiently corrected for the inspection of the public eye. Perhaps, they may make their appearance in future numbers of this *Journal*.

The writer of this feeble tribute, long and intimately acquainted with Dr. Walmsley, deplores the death of this young man as one of the most ingenious and learned of his pupils, and as one of the warmest and most disinterested of his friends. Reflecting on the richness of his talents ; estimating his scientific attainments, in connection with his early age ; and, above all, with a never to be effaced recollection of his uncorrupted virtues, he considers his death as a loss not merely to himself, not merely to the large circle of his friends, but to the whole community, and to the interests of science every where.

* These are the insects best known, in the United States, by the names of "Fire-flies," and "Lightning-Bugs." The Glow-worm of the English is one of them. The natural history of these insects has excited much of the attention of philosophers, especially (of late) that of the ingenious Mr. Carradori, of Pavia.



THE
PHILADELPHIA
MEDICAL AND PHYSICAL JOURNAL.

SECTION THIRD.

VOL. II. PART II.

xx

REVIEW.

I. *Lettera sulla Inoculazione Della Vaccina praticata in Sicilia dal Medico Francesco Calcagni, Diretta A. S. E. Signora D. Stefania Statella e Moncada Marchesa di Spaccaforno, Dama di Corte di S M. la Regina delle due Sicilie, &c. Palermo: 1804. 56 pages.*

WE are indebted to the kindness of a friend* for the following extracts from the preceding work, which is said to possess considerable merit.

“ This is the ordinary course of the Vaccina, and the phenomena which it generally presents. But frequently the time of unfolding itself varies, being shorter or longer; the succeeding symptoms also vary, being more or less violent.

“ I have observed the vaccina to appear on the eighth, tenth, fourteenth, and nineteenth day. In the city of

* Edward Cutbush, M. D.

Aidone, in a boy of five years of age, vaccinated September 28, the disease appeared on the 20th of October. In a girl, vaccinated by me on the 8th of December, the disease was visible after the fourth day of the operation, and gave clear signs, that it had taken effect. From this period, it made such slow progress, that, on the 26th of the same month, the vaccine pustule could scarcely supply virus sufficient to vaccinate other children.

" I observed in two patients*, that the vaccine pustule regularly appeared on the fourth day, dried on the seventh, and fell on being slightly touched by my finger. I made an incision through the middle of one of them, and found a coagulated humour in the centre.

" In many vaccinated, during the state of inflammation, some red spots were seen, which spread similar to those of the *Scarlatina*, and disappeared in a few days. A *miliary eruption* happened to others, bright, of a cineritious colour, elevated above the skin, without any redness, which gradually vanished in a short time. But sometimes such eruptions have been accompanied by redness, followed by a suppuration scarcely visible, which, from the third or fourth day of its appearance, dried, and presented a whitish scale†.

* D. Giuseppa Genchi and Anna Zitto.

† D. Girolamo Montaperto, D. F. Mayer, and others.

" Almost in all the sanguineous, fat, and coloured* subjects, the inflammation about the vaccine pustule appears greater, and more lively, than that which happens to the meagre, yellow, and debilitated: in the winter season, however, the inflammation appeared more red, the developement of the disease was longer, and the vaccine humour degenerated slower. I have observed the contrary during the summer; in this season, the *miliary eruptions* appear more frequently. In infants of two or three days, vaccination very often has not produced its effect; and, therefore, it is necessary to operate on them with the greatest care.

" The same has happened to me among boys, who were vaccinated whilst they were subject to *eruptions of the skin*, or to the Itch.

" It happened in some subjects†, that, on the seventh or eighth day, some pustules appeared on parts distant from the *innestation*, which enlarged, inflamed, and suppurated almost equal to the vaccine pustule, leaving a white spot on the part. We cannot attribute this to the contagion of the small-pox, as this city was not only free from it at that time, but has been for several years past. Upon this subject, I will relate to you an observation, which is believed, by me, one of the best facts at present on the vaccina.

* The author, I presume, means those persons, who have a ruddy complexion. E. C.

† D. Giuseppe Salamone, Maria Spatola, Giuseppe Gelli, Agata di Leonardo, Maria Anna Donari, and D. Francesco Paolo di Caro.

" July 13, 1801, I vaccinated Nicoletta Santoro, aged eight months, living in the street called Conce. On the 19th of the same month, whilst the vaccine pustule showed itself on the incision, *two others* appeared on the anterior muscles of the right thigh, another on the left, and a fourth near to the nipple of the left breast, surrounded by the usual redness, flat, with the edges elevated, equal in every respect to the true vaccina. I was induced to prove the inoculation with virus taken from one of these pustules. In fact, on the 22d of the same month, I punctured one of the pustules which appeared on the anterior part of the right thigh, and vaccinated Caterina Barucher, aged seven months, Anna Catalono, aged one year and eight months, and Paolo Manno, of five months.

" On the 26th, having examined them, I saw that the two first only had taken the vaccina. I did not cease to examine them daily, and ascertained, that in both, a true vaccina had discovered itself, with a regular and uniform course.

" May 16th, 1801, I vaccinated an infant of one year and seven months. On the 22d, I did not observe any sign of the vaccina. I returned to vaccinate it on the 28th, and, after the fourth day of the second inoculation, the second incision not only manifested itself, but the first likewise. Both dried up on the twelfth day from the last vaccination.

" A change in the axillary gland always accompanies inflammation, and the suppuration of the vaccina. But

sometimes it becomes swelled, and painful more than usual. I have also frequently observed an alteration in the *inguinal glands**. Another particular phenomenon happened in the person of Don Philip Ruffo, aged three years, vaccinated by me, December 19, 1801. On the 27th, whilst the vaccine pustule appeared, the axillary glands were not only affected, but the inguinal also; and was attacked with slight convulsions, as are usual in the natural small-pox. It frequently happens, that the vaccination remains without producing any effect, and it becomes necessary to repeat it many times†. Notwithstanding I repeated it more than once, and used the most scrupulous diligence, it was not possible to succeed in producing it. Marshall vaccinated Don Gaetano Gandolfo, aged two years, four times, with all possible care, without effect. In the course of four months after, he was vaccinated by me, and the true vaccina very soon appeared.

" Six other observations, made, with the greatest care, on subjects of different *ages* and *temperaments*, vaccinated, more than once, in different parts of the body, with vaccine virus always different, and taken at different periods of the disease, have led me to think, that the production of the vaccina depends not only on attention in the practice, or on the activity and quality of the virus, but also on a certain aptitude of the body of the person to be vaccinated.

* D. Valentino Guarneri, D. Giuseppe Cuomo, Rosa lo Piccolo.

† We ought not to repeat the operation more than four or five times, and not imitate a *physician*, who inoculated his own children nineteen times, without effect.

" Frequently, the disease does not present a perfect appearance, and is not accompanied by those essential phenomena, which ought to occur in the course of the *true vaccina*.

" All this has been observed by Jenner, Odier, Marshall, Decarro, Aubert, and other physicians. I have likewise observed the same twelve times; the *vaccina* may, therefore, be distinguished into *true*, *false*, or *spurious*."

II. Observations on the Utility and Administration of Purgative Medicines in several Diseases. By JAMES HAMILTON, M. D., Fellow of the Royal College of Physicians, and of the Royal Philosophical Society; and Senior Physician to the Royal Infirmary, Edinburgh. Edinburgh: 1805.

THIS is an octavo volume of somewhat more than 300 pages. As the production of an excellent practitioner, and a candid observer, we recommend it to the perusal of our medical readers. It contains much useful matter, written in a style of simplicity and neatness. We do not, indeed, subscribe to all the author's opinions. We should, on the contrary, were we to attempt an *analysis* of his work, point out several things in which we should be obliged to differ from him.

We beg leave to transcribe the following observations on the disease of Chorea, as a favourable specimen of the author's manner of treating his subject.

" In the course of my practice, I have seen above twenty cases of Chorea ; a greater number than it may have fallen to the lot of many to observe. I cannot say, with Sydenham, that I have succeeded in curing all these. For several of my patients presented themselves while I yet employed tonic and stimulating medicines ; when my practice shared the common fate, and met with disappointment. I am afraid, I may even sometimes have done harm, by the indiscriminate use of the cold-bath, a remedy not always suited to the exhausted and irritable state of the victims of Chorea.

" I now began to desert a practice in which I had lost confidence, and to consider Chorea in a different light from that in which it had been commonly viewed. I conceived that the debility and spasmodyc motions, hitherto so much considered, might not be the leading symptoms of the disease, but might depend upon previous and increasing derangement of health, as indicated by irregular appetite, and constipation of the bowels.

" Under this impression with regard to the erroneous opinions which had heretofore been entertained concerning the nature of the disease, and the consequent improper practice which I had employed for the cure of it, I resolved to alter my mode of treatment, in order that I might fulfil those indications which the new, and, as I flattered myself, the more correct, view of the disease had suggested.

" If my conjectures were well founded, the first and principal object of practice would be to remove the con-

stipated state of the bowels. In pursuance of this object, I began to try the effects of purgative medicines, given regularly in moderate doses.

" At first, I confess, I acted with all that caution and diffidence which the adoption of a line of practice, at variance with that which had been long approved and established, naturally inspires. But experience had convinced me of the safety of exhibiting purgative medicines in Typhus fever: I therefore did not think any great risk would ensue from a cautious use of them in the most debilitated state which Chorea might induce. The conjecture proved to be well founded; the success of the practice confirmed the justness of the opinion on which it was formed, and encouraged me to persevere with steadiness and activity.

" The purgatives employed in the first instance were of the weaker kind, and inadequate to the object to be obtained. Stronger ones were found to be necessary to move and discharge the indurated and fetid feces.

" I found the quantity of feculent matter collected, to vary in different subjects, and at different periods of the complaint. I could not ascertain this by any previous circumstance. One would think, that, in proportion to the fulness and prominence of the abdomen, and in proportion to the age and vigour of the patient, the accumulation ceteris paribus would be; but I do not observe that this is so. Perhaps the lengthened duration of the complaint, and the reduced state of the patient, the con-

sequence of this, are attended with the greatest feculent accumulation. * * * *

" I have already noticed, that Chorea consists of two stages. In the first, while the intestines yet retain their sensibility, and before the accumulation of feces is great, gentle purgatives, repeated as occasion may require, will readily effect a cure, or rather prevent the full formation of the disease.

" In the confirmed stage, more sedulous attention is necessary. Powerful purgatives must be given in successive doses, in such manner that the latter doses may support the effect of the former, till the movement and expulsion of the accumulated matter are effected, when symptoms of returning health appear. Whoever undertakes the cure of Chorea by purgative medicines, must be decided, and firm to his purpose. The confidence which he assumes is necessary to carry home, to the friends of the patient, conviction of ultimate success. Their prejudices will otherwise throw insurmountable obstacles in the way. Half measures, in instances of this kind, will prove unsuccessful; and, were it not for perseverance in unloading the alimentary canal, the disease would be prolonged, and, recurring, would place the patient in danger, and thus bring into discredit a practice which promises certain safety.

" Here, as in all other cases of extreme debility induced by disease, the recovery is at first slow and gradual. A regular appetite for food, a more intelligent eye, and lightened countenance, cheerfulness, and play-

fulness of temper, increasing aptitude for firmer motions, the restoration of articulation, and of the power of deglutition, a renovation of flesh and strength succeed each other, and, being more and more confirmed, are, ere long, followed up by complete recovery.

" For some time after these salutary changes take place, the state of the bowels must continue an object of attention. An occasional stimulus from purgatives will be requisite to support their regular action, and to restore their healthy tone, the only security against the recurring accumulation of feces, and of a consequent relapse.

" About this time, also, remedies possessed of tonic and stimulant powers, may be used with propriety and effect ; they restore energy to the torpid bowels, aid the purgative medicines in obviating costiveness, and thus confirm a recovery already advanced. Vegetable bitters, or the preparations of steel, may, perhaps, be the most useful for accomplishing these ends. I have not felt the necessity of having recourse to medicines of this kind : under a proper regimen of light and nourishing food, and of exercise in the open air, my patients in general quickly recover their strength. But many practitioners set a value upon tonic medicines ; and the usual routine of practice demands them.

" This exhibition of purgative medicines in Chorea is, I apprehend, countenanced by the practice of Sydenham and De Haen. It is, however, probable, that the purgative medicine was the only useful one which Sydenham employed ; and that his protracted cures may

be attributed to the interruption of the use of it, during the interposition of blood-letting, and of alterant and paregoric medicines.

" De Haen, in the eighth chapter of his first volume of the *Ratio Medendi*, narrates a case in the following words. ' Novem annorum puellam, cui post variolas morbillosque, primo tussis frequens, deinde sputum purulentum aderat, sputum demum plane cessabat, Chorea Sancti Viti prehendit, sinistro potissimum brachio pedeque, ac diversimoda faciei convulsio. Bimestri spatio, adhibita vi electrica, pustulæ copiosæ, eaque turpiter crustosæ, brachium et crus cingunt, *interpolatis purgantibus*, perfecta salus redivit.'

" By this treatment, which I have endeavoured to recommend, Chorea is speedily cured, generally in ten days or a fortnight, from the commencement of the course of purgative medicines. * * *

" In the structure of the female pelvis, and in the previous duration of Chorea, we may find the reason why it admits of a more or less difficult cure. When the disease is protracted, or when it occurs in girls, greater opportunity for the accumulation of feculent matter is afforded than in more recent cases, or than where it attacks boys. Of course, a longer time, and brisker purgatives will be required to move and expel the offending mass, in the former, than in the latter instances.

" Since I have employed purgatives in Chorea, I have been disappointed in effecting a cure in one case only.

" About three years ago, I visited a young girl, who had been the victim of Chorea for many weeks. The purgative medicines which I administered gave full evidence of a disordered and loaded state of the intestines. My patient was not under proper management; my advice was followed in an irregular and desultory manner, and the disease was protracted. After some time, she was carried home to a considerable distance, and I understood a quack medicine was given to her with the best effects. To my regret, however, I saw her about a year ago in the same situation in which she had left me, and I then learned, that she had continued in this situation during the whole of this interval.

" During the exhibition of purgative medicines in Chorea, practitioners will learn the propriety and necessity of inspecting the alvine evacuations. They are, in this important point, generally careless; the attendants in sick rooms are, of course, ignorant on the subject, and cannot give the information necessary for our ascertaining the effect of purgative medicines, or for directing us respecting their dose, and frequency of repetition.

" I have said, that Chorea consists of two stages, a circumstance which should induce those who have the superintendance of children to attend most carefully, at all times, to the state of their bowels. For the timely interposition of purgative medicines will be the best means of averting the accession of Chorea, which is so

formidable, and which, on some occasions, has been found so obstinate a complaint.

"The caprice of children will often thwart us, and oblige us to employ purgatives, not because they are such as we would prefer, but because they are such as will be taken. I have, in general, used the purgative medicines in Chorea which I had found useful in Mærasmus." *Pages 77—87.*

III. *An Address to the Medical Practitioners of Ireland, on the subject of Cow Pock. By SAMUEL B. LABATT, M. D., Licentiate of the College of Physicians, and Secretary to the Cow-Pock Institution, North Cope-street, Dublin.—Dublin: 1805.*

"——— Quid tuta times? Accingere; & omnem
Pelle moram."——

OVID.

WE have derived much pleasure from the perusal of this little volume, which we should be glad to see in the hands of physicians, especially those at a distance from large libraries, where more various information on the subject of the disease to which it relates may be procured. Indeed, we are of opinion, that, in a practical point of view, Dr. Labatt's little volume of about 140 pages, might supersede the use of many of the much larger volumes with which the shelves of the booksellers are filled: for we do not think that either the study of the "Cow-Pock," or the real benefits arising from this

disease, are essentially advanced by such libraries of publications as are daily proceeding from the press.

The work now before us is illustrated by two good coloured engravings, the first of which represents the disease of Vaccine, as it appears on the eighth and eleventh days after the operation has been performed; and the second exhibits the disease at a later period, about the fifteenth, when the scabs, such as are so advantageously employed at present, are formed.

The following extracts from the work may serve the cause of Vaccine inoculation in the United-States.

“Independent of the antivariolous power justly attributed to cow pock, it is asserted to have other material effects upon the constitution. These may be divided into *prejudicial* and *salutary*.

“It has been accused of exciting latent complaints, and of inducing others with which the system would not otherwise have been affected.—Troublesome eruptions on the skin, and obstinate glandular swellings have been laid to its charge; and where the seeds of scrofula lie dormant in the constitution, it is said to have roused them into action.—Such accusations are proved, by ample experience, to be totally void of foundation.—If a child, who has gone through the cow pock, be seized, several months after, with any complaint, no matter what, it will be supposed to proceed from thence.—Being requested to inoculate a child with cow pock, the operation was for some cause postponed; meanwhile the child

became affected with tumours in different parts of the body, which suppurated, and ran into ulcerations, and, becoming quite emaciated, died in a few months. I remember another instance of a child who was to have been vaccinated by a friend of mine, which was seized with convulsions on the day previous to the intended operation, and expired in a few hours. Now had these children been inoculated, can there be a doubt, but that their deaths would have been attributed by many to the cowpock? and their cases have been descanted upon very learnedly and at great length, by those who feel it a pleasure and their interest to avail themselves of every opportunity to depreciate this most beneficial practice? These occurrences should warn us against ascribing effects to different causes than those which really produced them.

"Jenner, Ring, Moreau, and many others, whose experience entitles them to give an opinion upon this subject, confidently assert, that so far from injuring the general health, or inducing the complaints alluded to, the effects of cow pock in improving the constitution, and removing several diseases, particularly those of the skin, have in many instances appeared to them remarkable. Mr. Simpson, in a letter to Mr. Ring, relates the case of a child who was cured, by vaccination, of a most violent and obstinate eruption of the *crusta lactea* kind, which covered the whole head and face, and the greater part of the body, and had resisted the most active medicines.—Several instances occurred to the same gentleman, in which the general health of weakly children was much improved by it.

" Dr. De Carro's experience tends to confirm the advantages of vaccination in cutaneous affections. He records the case of a child, seven years old, who was relieved by it from an herpetic eruption over the whole body, of three years standing, for the removal of which other means had been tried in vain.

" Dr. Colon, a zealous friend to vaccination (who, at a considerable expence, fitted up his own house, in the neighbourhood of Paris, for the reception and accommodation of those who were to be inoculated), enumerated several examples of the utility of the cow pock in these disorders, and in the scrofula.

" Dr. Cappe of York assents to the opinion, that it has a strong tendency to correct a scrofulous disposition in the system. It appeared to him considerably to relieve three cases of eruptions on the skin, and entirely to remove another complicated with ophthalmia. Mr. Hutchinson, of Manchester, has found vaccination a remedy in several cutaneous affections.

" Dr. Odier bears testimony to the restorative virtues of cow pock in weak and delicate constitutions.—Dr. Patterson of Montrose, Mr. Dunning of Plymouth Dock, and the Rev. Mr. Finch of St. Helens, are induced to concur with him in opinion, from the result of cases which fell under their observation.

" In two cases which occurred to Dr. Moreau, one a scrofulous ophthalmia, the other a fistula near the elbow,

the former was cured, and the discharge from the latter much lessened by it.

" The Committee of Vaccine Inoculation, at the Louvre, found that matter taken from vaccine patients labouring under other cutaneous diseases, such as the itch and small-pox, did not communicate any disease but the cow pock, and they believe that the vulgar opinion relative to the inoculation of other diseases with the cow pock, is without foundation. I believe the itch or other chronic eruptions of the skin, are not communicable with cow pock; but I should not think it prudent to take vaccine virus, for inoculation, from the arm of a patient labouring under small-pox.

" M. Fournier, of Brussels, gives us the case of a child four years of age, who for a long time was affected with deafness, which grew worse and worse. The tenth day after inoculation with cow pock, when the arm inflamed, the deafness began to diminish, and was entirely removed in a few days.

" Mr. Ring records two cases of the salutary effects of the new inoculation, communicated to him by Mr. Garsed, Surgeon of Blagan, in Glamorganshire, South Wales: one, an obstinate cough of some months standing, which did not yield to medicine. Five days, however, after vaccination, the cough disappeared suddenly, and did not return, the child remaining in perfect health. The other case was that of a boy, sixteen months old, who was so full of serofulous tumours, that it was the opinion of every medical man who saw him, that he

could not live more than twelve months. His mother also laboured under this disease, and had lost one child by it, who died in a most deplorable state. At the time of inoculating this boy with cow pock, he had several abscesses, particularly about the arms, neck, and shoulders; he went through the disease in the most favourable manner, the sores all healed in a short time, and the child was restored to perfect health, which was entirely attributed to the cow pock.

" Mr. Custance, of Kidderminster, had three cases of *Atrophia Lactantium* perfectly relieved by vaccination. And Dr. Patterson, already quoted, observes that " many children puny from teething, one with diarrhoea, and another with slight eruption and cough, from the same cause, but all without fever; as well as one child labouring under *pertussis sine pyrexia*, have been observed to get very fast rid of the complaints under which they laboured, and improve much in their general health after vaccination." Mr. Bryce found *tinea capitis*, sore ears, ophthalmia, &c. to be much relieved by it.

" Dr. Husson, of Paris, among several cases in which vaccination proved a remedy for other diseases, particularly mentions two. One of intolerable head ache, of several years continuance; the other of scrofula, cough, and shortness of breath: both were completely removed.

" Mr. Watt, of Paisley, records a case of a gentleman, who, by accidentally applying some vaccine virus to his nostrils, produced there two pustules, by which he was completely cured of a very obstinate soreness in his nose,

of several years standing. " May not the insertion," says he, " of the vaccine matter in some inveterate ulcers produce a permanent cure*?"

" Count de la Roque takes notice of a severe epidemic hooping cough, which prevailed at Lyons, during which it was observed, by medical men, that those who had been inoculated with cow pock either escaped the disease entirely, or had it in a mild degree. I have known Pertussis to get much better after small-pox inoculation.

" Many more instances might be adduced in support of the opinion entertained by those authors, of the efficacy of cow pock in removing several diseases. Any experience I have hitherto had does not warrant me in hazarding an opinion upon this important part of our subject. I have, indeed, seen two or three cases in which children seemed to have been relieved from obstinate eruptions by it: though, generally speaking, I am rather averse to inoculation, when other diseases are present, for reasons which I shall hereafter state. For my part, I shall not require any further benefits from the new inoculation than those already established, but will rest content with the assurance, that, without injuring the constitution in the smallest degree, it renders it for ever exempt from the contagion of small-pox. To be more convinced of the fact, that cow pock is not prejudicial to the general health, I lately visited a great num-

" * An ingenious medical practitioner of Calcutta suggested, lately, the application of vaccine virus to cancerous sores. The experiment has not, I believe, been yet put in practice.

ber of children, who were inoculated by me, one, two, or three years ago, and I did not, in a single instance, detect any unpleasant symptom imputable to it." *Pages-77—84.*

* * * * *

"P. S. Dr. Patterson, of Londonderry (who introduced the new practice into the north-west of Ulster), has favoured me with some communications relative to the cow pock. He is of opinion, that vaccinated subjects are considerably affected by *atmospherical influence*. He says, he has observed a constitution of the air, which might be denominated the *Cutaneous*, during which patients passing through cow pock seemed more or less disposed, by the appearance of concomitant eruptions, to partake of the general disposition to cuticular irritation. Some symptoms also seemed to depend upon the state of the weather, at particular times. He has reported several cases, as illustrative of this doctrine. In one, a morbillious eruption was observed. That it was not really measles, was proved by the patient being severely attacked with that disease, two years afterwards. In another, an anomalous pustular affection seemed somewhat to modify the vaccine. Scabs, and other cutaneous complaints, resembling varicella, &c. occurred in others, but which did not, according to Dr. Patterson's observations, either materially interrupt the progress of the cow pock, or leave any doubt upon his mind of the patients having had the genuine disease. Some were affected with severe sickness and vomiting. How far these efforts are referable to the causes assigned

for them, and whether or not eruptions, observed by other practitioners, may be in any degree attributed to a peculiar state of the air, I shall not attempt to determine. The opinion respecting the influence of the atmosphere in the production of diseases, has been maintained and opposed, by very learned and ingenious men, on both sides of the question. But the attention which this gentleman has paid to Meteorological observations, and the effects of climate, certainly entitles his opinions to respect, and it is to be wished that others may, by similar investigations, endeavour to elucidate this part of the subject.

"Dr. Patterson mentions a case, wherein the inoculation on the arm entirely failed, but a pustule appeared on the wrist, which ran its course, with characteristic exactness.—The patient, no doubt, was as well secured against small-pox as in any other instance. This accidental insertion was occasioned by the child's striking against the edge of the lancet, while the Doctor was withdrawing it after the operation, and the pressure which he made for a few minutes with his finger, and a linen bandage which he applied, to heal the wound, contributed materially, he thinks, to promote the absorption of the virus." *Pages 134—136.*

LITERARY AND PHILOSOPHICAL INTELLIGENCE.

1. PROFESSOR HOSACK, of New-York, has published *A Catalogue of Plants contained in the Botanic Garden at Elgin, in the vicinity of New-York, established in 1801*.—We sincerely congratulate the Professor on the success of his laudable exertions, and shall endeavour, in a future portion of the *Journal*, to give some account of the Catalogue.

2. The Editor of this work has printed, for distribution among his friends, a small pamphlet, entitled, *Facts, Observations, and Conjectures relative to the Generation of the Opossum of North-America. In a letter to Mons. Roume, of Paris.*

3. A small work, on the subject of LONGEVITY, or rather on the LONGEVITY OF LEARNED MEN, by the Editor, has been in the press for some time. From a variety of circumstances, but particularly from a desire to render the work as correct as possible, the sheets are very slowly printed; and it is not probable, that the work will be published (or printed for distribution) in less than two or three months.

AMERICAN PHILOSOPHICAL SOCIETY.

Conditions of the Magellanic Premium.

M. JOHN HYACINTH DE MAGELLAN, of London, having some time ago offered, as a donation, to the American Philosophical Society, held at Philadelphia, for promoting useful knowledge, the sum of two hundred guineas, to be by them vested in a secure and permanent fund, to the end that the interest arising therefrom should be annually disposed of in premiums, to be adjudged, by the Society, to the author of the best discovery, or most useful invention, relating to navigation, astronomy, or natural philosophy (mere natural history only excepted), and the Society having accepted of the above donation, hereby publish the conditions, prescribed by the donor, and agreed to by the Society, upon which the said annual premiums will be awarded.

1. The candidate shall send his discovery, invention, or improvement, addressed to the President, or one of the Vice-Presidents of the Society*, free of postage or other charges; and shall distinguish his performance by some motto, device, or other signature, at his pleasure. Together with his discovery, invention, or improvement, he shall also send a sealed letter, containing the same motto, device, or signature, and subscribed with the real name and place of residence of the author.

* Thomas Jefferson is President of the Society, and Robert Patterson, Caspar Wistar, and B. S. Barton, Vice-Presidents.—Philadelphia.

2. Persons of any nation, sect, or denomination whatever, shall be admitted as candidates for this premium.

3. No discovery, invention, or improvement shall be entitled to this premium, which hath already been published, or for which the author hath been publicly rewarded elsewhere.

4. The candidate shall communicate his discovery, invention, or improvement, either in the English, French, German, or Latin language.

5. All such communications shall be publicly read or exhibited to the Society, at some stated meeting, not less than one month previous to the day of adjudication; and shall at all times be open to the inspection of such members as shall desire it. But no member shall carry home with him the communication, description, or model, except the officer to whom it shall be intrusted; nor shall such officer part with the same out of his custody, without a special order of the Society for that purpose.

6. The Society having previously referred the several communications from candidates for the premium then depending to the consideration of the twelve counsellors, and other officers of the society, and having received their report thereon, shall, at one of their stated meetings in the month of December, annually, after the expiration of this current year (of the time and place, together with the particular occasion of which meeting, due notice shall be previously given, by public advertisement), proceed to the final adjudication of the said premium: and after

due consideration had, a vote shall first be taken on this question, viz. Whether any of the communications then under inspection be worthy of the proposed premium ? If this question be determined in the negative, the whole business shall be deferred till another year; but if in the affirmative, the Society shall proceed to determine, by ballot, given by the members at large, the discovery, invention, or improvement, most useful and worthy ; and that discovery, invention, or improvement, which shall be found to have a majority of concurring votes in its favour shall be successful ; and then, and not till then, the sealed letter accompanying the crowned performance shall be opened, and the name of the author announced as the person entitled to the said premium.

7. No member of the Society, who is a candidate for the premium then depending, or who hath not previously declared to the Society, either by word or writing, that he has considered and weighed, according to the best of his judgment, the comparative merits of the several claims then under consideration, shall sit in judgment, or give his vote in awarding the said premium.

8. A full account of the crowned subject shall be published by the Society, as soon as may be after the adjudication, either in a separate publication, or in the next succeeding volume of their Transactions, or in both.

9. The unsuccessful performances shall remain under consideration, and their authors be considered as candidates for the premium, for five years next succeeding the time of their presentment ; except such performances as

their authors may, in the mean time, think fit to withdraw. And the Society shall, annually, publish an abstract of the titles, object, or subject-matter of the communications so under consideration; such only excepted as the Society shall think not worthy of public notice.

10. The letters containing the names of authors whose performances shall be rejected, or which shall be found unsuccessful after a trial of five years, shall be burnt before the Society, without breaking the seals.

11. In case there should be a failure, in any year, of any communication worthy of the proposed premium, there will then be two premiums to be awarded in the next year. But no accumulation of premiums shall entitle an author to more than one premium, for any one discovery, invention, or improvement.

12. The premium shall consist of an oval plate of solid standard gold, of the value of ten guineas: on one side thereof shall be neatly engraved a short Latin motto, suited to the occasion, together with the words, The premium of John Hyacinth de Magellan, of London, established in the year 1786. And on the other side of the plate shall be engraved these words: Awarded by the A. P. S. ——, for the discovery of ——, A. D. ——.

And the seal of the Society shall be annexed to the medal, by a ribbon passing through a small hole at the lower edge thereof.

Conditions of the Extra-Magellanic Premium.

Mr. de Magellan having fixed at ten guineas the sum to be annually disposed of as a premium according to the strict terms of the donation, and the Magellanic fund having been so managed as to produce an annual surplus, the Society, with a view to promote, as far as may be in their power, the liberal intentions of the donor, have determined that the above **SURPLUS MAGELLANIC FUND** shall be employed, in the first instance, according to the strict conditions of the donation, if a sufficient number of deserving candidates shall have applied for the same; otherwise, that such surplus, or so much thereof as cannot be applied as above, be awarded by the Society to the authors of useful inventions or improvements, on any subjects within the general view of the Magellanic donation, or to the authors of such communications as may lead to such inventions or improvements, and which communications may be deemed worthy of the premium. The premium to consist of a **GOLD MEDAL** of the value of not less than twenty, nor more than forty-five dollars; or the same sum in money, at the option of the candidate, accompanied with a suitable diploma on parchment, with the seal of the Society, and "may be awarded at such stated meeting of the Society, as shall be agreed to at a previous stated meeting; due notice thereof being given to the members."

The Society have also thought proper to point out a few subjects, to which they would wish to direct the attention of those who may be disposed to become candi-

dates for the premium; informing them, at the same time, that communications on other subjects which come within the general or particular views of the donor, will not be excluded from the competition. It is also necessary to be observed, that all communications for the extra premium must be made and transmitted agreeably to the form and manner prescribed in the conditions for the original premium.

The objects towards which the Society would direct the attention of candidates are,

1. The best experimental essay on native American permanent dyes or pigments, accompanied by specimens.
2. The best means of navigating our rapid rivers against the stream.
3. The best essay on the general natural history of the ranges of American mountains in the country east of the river Mississippi.
4. The best essay on the natural history and chemical qualities of the hot and warm springs of the United-States; or of any one of them.

ADAM SEYBERT,
J. R. COXE,
T. C. JAMES,
T. T. HEWSON,
Secretaries.

Philadelphia, March, 1806.

UNIVERSITY OF PENNSYLVANIA.

THE MEDICAL LECTURES, in this institution, will commence on the first Monday of November, next; and will, as usual, continue for four *entire* months.

The present Professors are,

1. WILLIAM SHIPPEN, M. D., *Professor of Anatomy and Midwifery*:
2. CASPAR WISTAR, M. D., *Adjunct Professor of Anatomy and Midwifery*:
3. BENJAMIN RUSH, M. D., *Professor of the Institutes and Practice of Medicine, and of Clinical Practice*:
4. JAMES WOODHOUSE, M. D., *Professor of Chemistry*:
5. BENJAMIN SMITH BARTON, M. D., *Professor of Materia Medica, Natural History, and Botany; and*
6. PHILIP SYNG PHYSICK, M. D., *Professor of Surgery*.

Dr. BARTON delivers three distinct courses of lectures in the year : viz.

- I. In the winter-season, a course of lectures on the MATERIA MEDICA, considering this science in its *most extensive sense* :
- II. In the winter-season, also, a course of lectures on NATURAL HISTORY ; and
- III. In the spring and early summer, a course on BOTANY.

I. MATERIA MEDICA.

The lectures on Materia Medica commence at the same time with the other winter-courses, viz., in the first week of November, and continue to the close of February, or the end of the first week in March. The Professor delivers, at least, four lectures every week : viz. on *Mondays* and *Tuesdays*, and on *Thursdays* and *Fridays*. These lectures are delivered between the hours of ten and eleven o'clock, in the morning. In the latter part of the season, he generally delivers five, and sometimes six, lectures in the week.

In these lectures, after giving an extensive view of the *primordia*, the progress, and the present state, of the Materia Medica, in different countries ; after an inquiry into the various means which are employed by mankind, both in the savage and in the civilized state, to attain a knowledge of the medicinal or alimentary articles, which

they employ; after a review of the principal arrangements of the articles of the science, with strictures on those arrangements, pointing out their peculiar advantages and disadvantages, the Professor proceeds to treat of

A. ALIMENTS.

In this part of his course, he treats, at length, of the natural history of aliments, and condiments, both vegetable and animal, involving, of course, their chemical constitution; their comparative salubrity; their real or supposed influence in varying the genius and tempers, the moral and political condition, of individuals and of nations; the healthy and the morbid conditions of the system to which they are especially adapted; and many other questions of the same kind.—Here, too, he examines the question, “What is the proper food of man?” in doing which he is led into an inquiry respecting the fabric of the teeth and intestines, in various species of animals;—endeavours to show, that the teeth do not give an unequivocal indication of the nature of an animal’s food;—that these parts of the bony structure cannot be made the basis of a *natural*, and ought not to be made the basis of an *artificial*, arrangement of the animals called *Mammalia*;—inquires how far the more purely carnivorous animals are capable of subsisting *chiefly* upon vegetable matters; and how far the more purely herbivorous animals are capable, by art or necessity, of restricting themselves to a diet *chiefly* animal.

In his lectures on MILK, which are delivered in this department of his course, the Professor does not confine himself merely to the natural and chemical history of this fluid as it is furnished to us by the female of the human kind, and by other animals; nor to an inquiry into the diseases or conditions of the system, in which milk is supposed to be salubrious or injurious; but he is led into extensive excursions on the duration of the term of suckling, and on the state of infancy, among nations, particularly among the savage nations of America; on the moral habits of mothers, so far as they may be supposed to be connected with the practice of suckling their own children; and on other questions of this kind.

This part of the lectures involves the consideration of many subjects relative to the PHILOSOPHY OF AGRICULTURE, and the PHYSIOLOGICO-NATURAL HISTORY OF MAN: such, besides some that have already been hinted at, as the question relative to the FOOD OF PLANTS; the ROTATION OF CROPS; the NATURE OF SOILS; the INFLUENCE OF LIGHT UPON VEGETABLES, AND UPON ANIMALS; SPECULATIONS CONCERNING THE COLOUR OF THE HUMAN SPECIES, &c.

B. MEDICINES.

Having finished the subject of aliment, the Professor proceeds to treat of medicines, more properly so called. This part of the course is by far the most extensive, the subject of aliment being discussed in about three weeks, or in ten lectures.

In treating of medicines, the Professor does not implicitly follow, or adopt, the arrangements of any preceding writer: on the contrary, he pursues an arrangement of his own. This arrangement, however, is far from being perfect; nor is it satisfying to the Professor himself. He offers it, with diffidence, as a sketch, or idea, of what he hopes to render much more complete, at some future period.

Before entering on the consideration of the *individual* articles of the science, the Professor gives what he calls the **GENERAL CHARACTER** of the class, or rather section, of medicines of which he is treating: that is, he speaks of them, 1, *physiologically*, as the whole body of medicines, included in the section, are found to produce somewhat of one general assemblage of effects upon the living system, especially when in a healthy state; and, 2, *pathologically*, as the same body of medicines is found adapted to the cure of an individual disease, or to that of a family of diseases. This part of the subject is especially intended for the student somewhat advanced in medical reading, observation, and inquiry.

In treating of *particular* medicines, whether they be derived from the vegetable, the animal, or the mineral kingdom, or elsewhere, the Professor always delivers, where it seems in the least requisite to do it, the natural history of the article of which he treats. He illustrates, whenever this can be done, the subject of his lecture, by specimens or correct drawings. He treats, at length, of the effects of the articles upon the pulse, or arterial system, and upon the other individual or subordinate

systems of which the general system is composed. Nor does he confine himself to a history of the effects of medicines upon the human constitution. In many instances, he pursues the enumeration of effects through all the known classes, or series, of animals; and even points out their effects upon vegetables. He enumerates the principal diseases, and the peculiar forms, or *varieties*, of those diseases, in which the medicines are used with advantage; or in which, considering the subject both practically and theoretically, they are contra-indicated. He is careful to mention the doses in which the articles he treats of, are used, in persons of all ages, and of various constitutions; and he pays particular attention to the pharmaceutical treatment of those articles.

In this course of lectures, none of the *really important* articles of the *Materia Medica* are left unnoticed. Many of the articles, however, are dismissed with a very few words; that it may be in the power of the Professor to give an extensive history of those medicines, or articles, which he supposes to be peculiarly entitled to the attention of physicians, especially those of the **UNITED STATES.**

In short, the Professor views his subject, and endeavours to treat it, **AS ONE OF THE MOST IMPORTANT OF ALL THE BRANCHES OF MEDICAL SCIENCE:** a branch which *necessarily* involves a greater variety of matter than any of the other branches; a branch, the state of which may be considered as the best land-mark of the actual medical improvements of a country.

II. NATURAL HISTORY.

The lectures on Natural History commence soon after those on the *Materia Medica*, and continue until the close of the winter session. The Professor delivers at least three lectures every week, one of which is demonstrative. These demonstrative lectures are delivered in the extensive and valuable **MUSEUM** of Mr. Peale.

Hitherto, in this course of his lectures, the Professor has chiefly confined himself to the science of **ZOOLOGY**; but it is his intention to enlarge this course, and to extend it to other branches of the science of Natural History, especially to **GEOLGY**.

The lectures on Zoology divide themselves very naturally into two parts: viz. the **NOMENCLATURAL** and the **PHILOSOPHICAL**.

A. NOMENCLATURAL NATURAL HISTORY.

Under this head, the Professor includes whatever relates to the classification, the terminology, the external characters, &c., of the animals of which he has occasion to speak. He exhibits a view of the principal systems of classification that have, hitherto, been given to the public, but he does not especially follow any of them. In treating of the *Mammalia*, in particular, he exhibits an outline of his own, as yet immature, arrangement of these animals.

B. PHILOSOPHY OF NATURAL HISTORY.

Under this head, the Professor, in common with other naturalists, includes whatever relates to the Physiology, the Manners, the Instincts, the Uses, &c., &c., of animals. But he does not deem it necessary to dwell, in this place, upon the objects of this course of lectures, as it is his intention to publish, for the use of his class, a copious **SYLLABUS** of the lectures.

III. BOTANY.

The lectures on Botany commence about the 8th or 10th of April (a few days earlier or later, according to the season), and terminate by the middle of June. The Professor pursues, in general, the plan which he has followed in his *Elements of Botany*, published in 1803.—A Syllabus of the PHYSIOLOGICAL and MISCELLANEOUS subjects, involved in these lectures, will accompany the Syllabus of Natural History.

We are happy to inform our Medical Readers, and particularly the STUDENTS OF MEDICINE, in every part of the Union, that the large, elegant, and commodious building, intended for the accommodation of the Professors and Students, is in great forwardness, and will be ready for the reception of the classes in the course of the ensuing winter.

APPENDIX.

OBITUARY.

DIED, at Winchester, in Virginia, on the 21st of September last, DOCTOR DANIEL CONRAD. He fell a victim to a most violent and obstinate remitting fever, which he contracted at Bath (or Berkeley-Springs), where he had been, for a few days, on a visit to a patient, who, it is said, laboured under a fever of a similar form.

DOCTOR CONRAD was a native of Virginia. He received the first principles of his medical education in his native state, and in the University of Pennsylvania. He afterwards studied at Edinburgh, and in some other European schools. Upon his return to America, he fixed himself at Winchester, where he soon acquired the confidence of the inhabitants of that town, and of the neighbouring country. For several years, he was most extensively engaged in practice, in one of the most opulent settlements of Virginia, and among one of the most respectable and informed portions of the inhabitants of the state. Perhaps, no physician was more uniformly happy in enjoying the confidence and the affections of his patients than Dr. CONRAD. Wherever he went, his visits

were acceptable, by reason of his skill, his assiduous attentions, and the agreeable, though dignified, deportment of his manners. His numerous patients were all his affectionate friends, and enthusiastic admirers. He enjoyed, moreover, the rare felicity of having his merits acknowledged, even by those who were most envious of his reputation, or success in life. His talents were, unquestionably, highly respectable; he had enlarged and strengthened his mind by much and various reading: but, above all, he was a careful observer of the forms and phenomena of diseases, and of the effects of medicines. The writer of these lines was well acquainted with the friend whose death he deplores. In his frequent intercourse with him, he admired him for the candour with which he related the facts that he had collected, and the observations which his extensive business had enabled him to make. He had too much sense to be misled by the idle, ever-changing, theories of physicians: he placed too high a value upon truth not to acknowledge his failure of success; and he was too intimately acquainted with medicine not to perceive and deplore the still immature and feeble state of this most useful and dignified profession.

Though still a young man, we believe under thirty-seven years of age, DOCTOR CONRAD would have ranked high in his profession, in any portion of the United-States, or in any part of the world. The death of such a man is a public loss: a loss not easily repaired. Long will this loss be felt and acknowledged by the inhabitants of Winchester, and of the surrounding country, through an extent of many miles. To his

family, who almost adored him for his merits and his worth, in the various relations of husband, father, brother, master, his death is a loss irretrievable. The writer of this tribute to the memory of an excellent member of society, feels and acknowledges, in this recent removal of another of his medical friends, a new diminution of the quantity of his happiness. He begs leave to mingle this feeble estimate of the merits of **DANIEL CONRAD**, with the more just, the infinitely more eloquent and impressive, tributes that are paid to his talents, his virtues, and his usefulness, by the tears or regrets of thousands.

B.

THE Editor acknowledges the receipt of two papers, which came too late for admission in the present portion of the *Journal*. These papers are by Dr. John B. Davidge, of Baltimore, and Dr. Calvin Jones, of Raleigh, in North-Carolina. Due attention shall be paid to the communications of these gentlemen, in a future number of the *Journal*.

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